

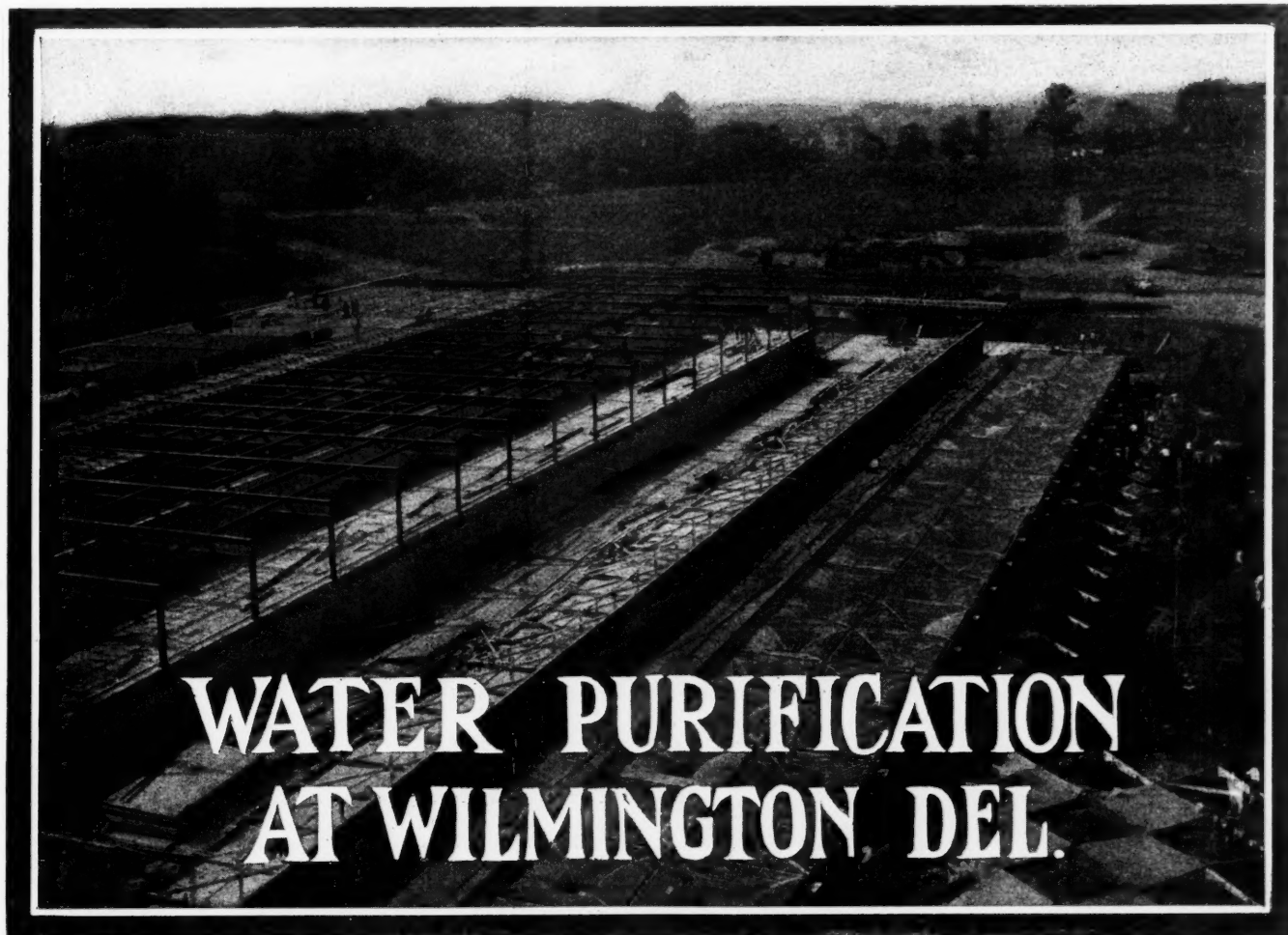
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GENERAL VIEW OF SAND FILTER PLANT, SHOWING ALL STAGES OF CONSTRUCTION

By M. C. KRARUP

At Wilmington, Del., the work done during the past five years in preparing the plans for the water works plant, which is now expected to be finished in January next, has been carried on with a fixed determination to establish facts and principles for the purification of drinking water which would be applicable in practically all communities where the need for purification exists. One valuable discovery or invention made in connection with this preparatory work, and which might readily have been patented, has been left free for the world to use, and the data which have been collected will soon be published in these columns by Dr. A. Robin, who, as bacteriologist of the Water Works Department, has been chiefly responsible for the defining of results as the work progressed, and the adoption or rejection of processes of filtration. Meanwhile a partial statement of results may be briefly made.

The plant when completed will consist of three units: 1, the pumping station and sponge filter plant located on the banks of

Brandywine Creek in the city of Wilmington, and receiving water from the dammed race of this stream; 2, the reservoir, located several miles out of the city on a level about 120 feet higher and receiving its supply from the sponge filter plant through a 36-inch steel force main, and, 3, the large, slow-sand filters with pure-water basins underneath, located adjacent to the reservoir, but on considerably lower ground, and which are now approaching completion.

Units Nos. 1 and 2 are now supplying the city with its drinking water and have been doing so for the past two years. The sponge filters are 10 concrete basins with underdrains of perforated tile over which there is spread, first, a 2-inch layer of cut stone, then 12 inches of coke, then sponge to a thickness of 2 feet, and a framework covering of wooden slats, being constructed on a plan similar to that used for the preliminary filters at Lower Roxborough, Philadelphia. These filters could not be operated satisfactorily unless a method of cleaning was devised which would effectually clean the beds in position.

After many experiments with other methods, Dr. Robin finally hit upon the plan of cleaning them with air from underneath. This method at once proved completely acceptable, has been in use to date and will be continued indefinitely. The turbidity of Brandywine Creek varies considerably with the seasons and the weather, but, as a rule, the cleaning by this method of one filter each month is sufficient to keep them all in good working order. Still, the water is visibly clearer in a bed which has been recently flushed than in one whose turn is coming. After a bed has been connected with the blower and the air has been turned on for a minute or so, the whole surface of the water in the bed becomes strongly agitated with large bubbles and looks as if boiling, a fine vapor rising with the escaping air. More and more reddish mud is driven out of the sponges, through the lattice board covering, and is held suspended in the upper layer of the water by the rising bubbles. Now the influx gates are opened, and at the same time the efflux weir is adjusted to skim off the surface at a rate which will empty the turbid mass back into Brandywine Creek, through a large measuring box, in about one hour and a half; whereafter the



WILMINGTON FILTER BEDS AND RESERVOIRS

normal flow is restored. But for this method, which would be quite inexpensive if the plant furnished its own power or did not have to pay commercial rates for electrical current, the sponge filters would be useless. As it is, their usefulness has been reduced somewhat through faulty construction of the admission gates by which it had been the design to control the rate of flow through the filters with accuracy. These gates are simple floating weirs and had been designed with a view to a mode of operation of the filters for which the varying level of water in Brandywine Creek would have made no difference. With the practice which was adopted, however, it has been found that they admit greatly varying amounts of raw water at any constant adjustment.

If the sponge filters were intended to do final work, this defect would necessarily have to be removed by the adoption of a new type of gates, because it has been found that the efficiency of the filters is entirely determined by the rate of flow. At 50,000,000 gallons per acre per day both the percentage of turbidity and the number of bacteria will be reduced just half as much as when the filter is operated at 25,000,000 gallons per day. At the rate at present maintained the sponge filters remove 50 to 75 per cent of the turbidity and bacteria from the raw water, and it is perfectly feasible to combine with this action such further reduction of bacteria as may be accomplished by adding one part of sulphate of copper for each 1,000,000 gallons of water. Experiments have proved that this admixture quickly reduces the disease-bearing bacteria, and especially the *B. coli* and typhoid germs, from the high number per c.c. which is known to threaten an epidemic, to a safe low number which greatly minimizes the danger. While it is not absolutely proven that sulphate of copper, even in this ex-

treme dilution, may be absorbed by the human system without harm when used day after day and year after year, it is known to be harmless for any brief period, such as one month, and it is among the results established at the Wilmington plant that it would be desirable at certain seasons of the year, at any place where the water supply is insufficiently filtered and purified by other means, to dose it at the rate referred to, as soon as the daily quick (18-hour) tests for *B. coli* disclose their presence in increasing numbers in the raw water, and to continue the dosing until the danger of a typhoid epidemic from this source is past. Such dosing may be considered as a physician's prescription for the whole community under emergency conditions, but at present popular opposition to the principle of it prevents its adoption. It seems within the range of immediate possibilities that each water works district may in the near future be required to publish daily bulletins giving the condition of the raw and of the purified water, as well as the action taken to prevent disease from this source. This would be a step leaving the individual perfect freedom and could not be stigmatized as savoring of paternalism in municipal government; any more than the publishing of weather forecasts by the Meteorological authorities.

By reducing the rate of flow in the sponge filters it is, as above stated, perfectly feasible to reduce both the turbidity and the number of bacteria to an acceptable minimum, and, as a plant of the kind operated at Wilmington, with cleaning of the filters by suffused air, demands but a minimum of attendance and, once right, may be very cheaply maintained in perfect order, it might seem that additional sand filters and at least one of the two reservoirs could be spared. But it is to be noted that while bacteria are reduced in number in proportion to the slowness of the filter action, the species of bacteria are not all reduced at the same rate. The sponge filter has in this respect one kind of action, which is somewhat varied according to circumstances; sedimentation in the reservoir has another action, and slow sand filtration has a third kind of action. The details of these complications are best elucidated by the complete presentation of all the data which Dr. Robin has gathered. Here it suffices to say that three successive processes of purification have been found superior to one process conducted on a larger scale, both bacteriologically and for clarifying purposes, and that financially the establishment of three processes is no more burdensome than such extension of one process as would be necessary if a sufficiently slow rate of filtration were adopted to secure satisfactory results.

Security against breakdowns is obtained by the Wilmington plan, inasmuch as the sand filters may go out of action without bringing about a worse condition than that under which the city is at present being supplied, and if the sponge filters were incapacitated, sufficient purification could be accomplished by means of the reservoir and the sand filter plant. In this respect the situation is less favorable in other cities where the reservoir is the last link in the processes.

In the slow sand filter beds, which are in process of construction, several features are incorporated which have never been tried elsewhere on a large working scale. The location of the reservoir basins, containing six million gallons of purified water, underneath the filter beds instead of separately and under the open sky, is one of these. The beds are each forty feet wide and 352 feet long and are intended to be operated at the rate of ten million gallons per day, that being the average daily consumption of the city of Wilmington; but the capacity can be increased to fifteen million gallons without falling below the degree of final purification which is considered desirable. The underdrain of the beds consists of a central longitudinal split-tile drain, with supporting lugs, to which the entire floor, covered to a depth of one foot with coarse broken stone, slopes gently from both sides. The sand, placed on top of the stone with an intermediate layer of gravel, is only two feet deep and is all of one grade of fineness. The concrete walls between the beds rise to a height of about eight feet above the water level, and in them, near the top, are secured brackets supporting

one rail on each side of each bed. A Blaisdell sand-washing machine, costing \$35,000, is to travel from one end to the other of each bed on the rails, spanning the width of the bed and cleaning the sand completely as it moves along. Between the southern ends of all the beds and the broad facade of the whole structure there is a broad and deep dry gallery in which all pipe connections in the plant may be inspected and adjustments made, and a carrying-platform moved on rails over the upper portion of this gallery serves to switch the sand-washing machine from the end of one bed to that of the adjoining one, or to any of the other beds.

The principle of the Blaisdell machine is that of the popularly known vacuum cleaner. A square box or caisson is pushed down through the sand to its bottom and, by now creating a vacuum in the upper portion of the box, the water rushing through the sand from underneath carries all sediment with it, and incidentally also about two per cent of the sand; and the muddy water, being first separated from the now cleaned sand underneath, is forced through an outlet pipe from the machine to a gutter formed in the upper edge of the separating-walls between the filter beds, whence it is drained away. The two per cent of sand lost in the operation is mainly composed of those particles which are too fine for doing good work in the filtering, and it is therefore supposed that the replacement of this quantity of a sand in the beds will improve their quality. The high cost of this type of washer is believed to be more than offset by the low cost of operation and maintenance. The suction-caisson is successively placed over all the squares comprising the entire area of each bed, and the operation in each location is a matter of seconds. While the mechanical effectiveness of this machine has been demonstrated, a detail study of its economy and of the biological and bacteriological effects in sand filters which may attend this method of cleaning will be prosecuted at Wilmington for one year after the beginning of practical operation.

FINGER PRINT IDENTIFICATION

MUNICIPAL JOURNAL AND ENGINEER,
231 West 39th St., New York City.

Dear Sir:—

Can you furnish me with any data relative to the use of the Finger Print System of Identification?

Any information concerning its advantages or disadvantages will be greatly appreciated.

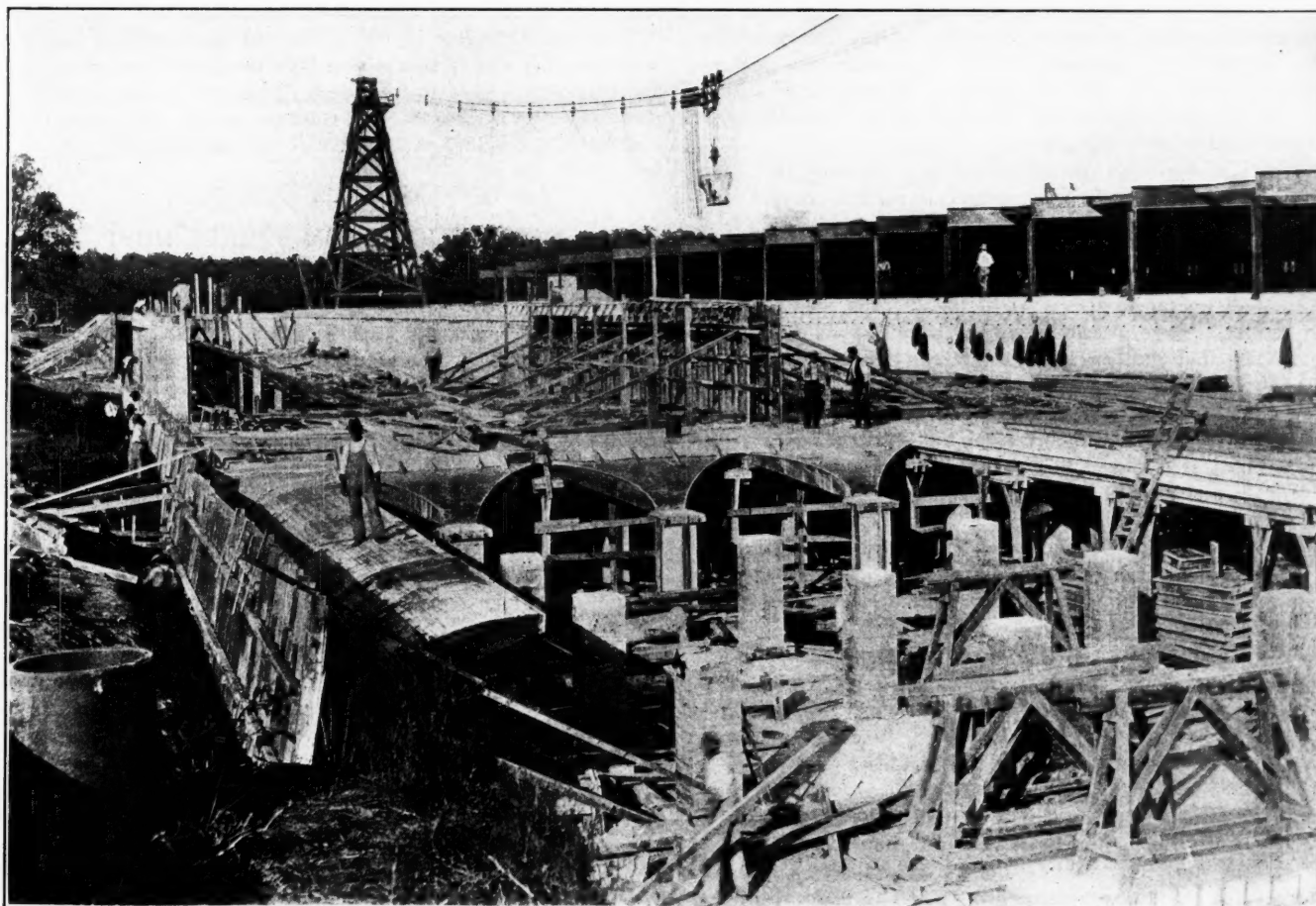
Yours truly,

October 28, 1909.

J. R. R., Clerk, Board of Police.

The finger print system of identification has been used in this country for about five years. It is now used by the Police Departments of New York, Boston, Baltimore, Washington, St. Louis, Kansas City, San Francisco, Cincinnati, Cleveland, Louisville, Indianapolis and Memphis. London was, we believe, the first city to adopt this as an important part of the police procedure. The U. S. Navy uses this system for preventing the re-enlistment of deserters, every man now enlisted in the navy having his record thus preserved. It is claimed that the chances are that not only do no two people now living have the same finger prints, but that none of these is likely to be duplicated for several generations. It is also claimed that nothing short of actually removing the ends of the fingers can destroy the peculiar pattern exclusive to each individual. If these are facts, the identification thus furnished is certainly superior to any other method yet devised for identifying criminals. It cannot, of course, be of any assistance in catching a criminal, except in the indirect way of enabling the police to pick him out of a crowd of suspects whom they already have in their power.

It would seem to be of especial importance in identifying criminals at a distance by mail or telegraph. The finger prints have been so classified that a description of one can be given in a telegram of ten or fifteen words. This would be sufficiently accurate to justify holding a prisoner for further identification, and a photograph of a finger print from the records compared with one of the prisoner may be accepted as complete identification if the two correspond.



COVERED RESERVOIR, WALLS OF FILTER BEDS, AND ROOF, PARTIALLY COMPLETED

The taking of the finger prints is an easy matter, which can be readily performed by any desk sergeant or, in fact, by any intelligent member of the force. The classifying of the prints is a somewhat more difficult matter, but one which can be learned by an intelligent man in a few days. The experts of the city of New York are glad to instruct any police officials of any other city in the details of making and classifying finger prints.

One of the advantages of the system, which advantage increases immensely as the use of the system increases, is that there is maintained at Washington a clearing house of finger prints, the idea being to have copies of prints of all criminals sent to this headquarters, together with the history, so far as known, of the criminal. Any city, then, which wishes to learn more concerning a suspect can send his finger print to the Washington Clearing House, and if his print is there, can learn all that is known concerning his past career.

The expense of the system consists only of a card catalogue case for filing finger prints, and any expense attached to instructing an employee of the police department in the method of classifying finger prints. It is not supposed, of course, that this system will do away with the use of photographs. These are necessary for the recognizing of criminals either by the detective force or by private citizens. As supplementary to this, however, and as conclusive identification of prisoners, it would seem to be invaluable.

COMMISSION RULE FOR SPOKANE

Advocated by Mayor Pratt—Present Government a Failure
—Functions Largely Administrative—Centralize Authority
and Responsibility—Initiative and Referendum

THE Mayor of Spokane, Wash., Nelson S. Pratt, is convinced that the present form of municipal government in that city (and most others) is "cumbrous, irresponsible, dilatory and extravagant," and has written an open letter to the citizens urging them to adopt the commission form of government. He appointed, a few days ago, a committee of seventeen citizens, business and professional men, to report on the advisability of such a change. The full text of his letter is appended:

"My experience (six years) in the two departments of this city's government, in the council and as mayor, coupled with careful and intimate observation of its workings in detail, have persuaded me to the conclusion that our system is a failure. As a political organization there is no excuse for its existence, because all its functions are of a business and administrative rather than a political nature. As an administrative organization, it is cumbrous, irresponsible, dilatory and extravagant—in a word, it is totally inefficient and inadequate. Even when controlled by honest and capable officials, such an organization cannot be successful, while if controlled by dishonest and incapable men, it is doubtful if any device of human contriving affords greater opportunity and assurance of theft, inefficiency and waste.

"The two functions of government, political and administrative, the first governing and the latter business-doing, apply to municipal affairs in widely different proportions. Probably it is not too much to say that nineteen-twentieths of the things to be done by a municipality belong to the latter class. The American political organization adapted to governing—to legislating and to the laying down and enforcing of rules of conduct and right as to persons and property—is wholly unnecessary and inadequate when used for the transaction of municipal business.

"The 'checks and balances' of the American system of political organization, when applied to the administrative affairs of the city government, become 'checks and hindrances,' dividing or shifting the responsibility and producing irresponsibility. The method traditionally deemed necessary in political government, when considering matters of general policy, results in an endless catalogue of municipal sins, both of omission and com-

mission—unimproved streets, broken pavements, defective sidewalks, inadequate sewer systems, delayed viaducts, insufficient water supply, ruined laws, lack of proper control over public service corporations, and, worse of all, that most conspicuous blot on American government—municipal corruption. It places no premium upon official alertness, but instead is a direct incentive to official slothfulness, petty bickerings, cabals and intrigues.

"In our city government we do vast quantities of business in the legislative manner, which, to be successful or economical, must be conceived and executed by the same man or group of men in the strictly administrative manner. We pave a street with all the legislative formulæ of proceedings attendant upon the preparation and passage of a tariff measure or a criminal code.

"In recent years, the proper solution of this impossible situation has apparently been found by some American cities. The general scheme adopted has been to concentrate in one small body of men, chosen by the entire electorate, all the administrative and governmental functions of the city. As a means of effective efficiency, such a plan represents the best mode that American business experience has developed. Elected by the popular vote and subject to recall, such a body is fully responsive to the people. If there is added to this, as a part of the general plan, the initiative and referendum, full assurance of the representative quality of the body is procured.

"On the other hand, the ample powers and responsibilities of the positions are sufficient to attract men of greater ability and caliber than are ordinarily obtained under our present plan. The experience of the cities that have adopted the system here suggested is altogether favorable to it.

"Upon the considerations stated, I am convinced Spokane should take steps to change its form of government to one of the kind already indicated and that the change should be effected with all reasonable expedition. To that end I purpose, within a few days, to name a committee to investigate and report as soon as practicable upon the general plan and outline of a proposed charter, such as I have herein suggested.

"I earnestly suggest to the citizens of Spokane that in the meantime they give to this subject their thoughtful consideration and that with a view to intelligent discussion of any proposed plan they inform themselves as fully as possible concerning the experiences of other cities having the commission form of government."

CONSUMPTION FROM STREET DUST

IN an article on "Mortality from Consumption in Occupations Exposed to Municipal and General Organic Dust" (Bulletin No. 82, Bureau of Labor), Frederick S. Hoffman discusses in detail the consumption frequency in four occupations particularly exposed to street dust. These are street cleaning and refuse disposal, drivers and teamsters, coachmen, cabmen, and men employed in omnibus service and subway employees.

According to the insurance experience, 25.5 per cent of deaths in occupations with exposure to municipal dust were due to consumption, and in occupations exposed to general organic dust the proportion was 23.0 per cent. As compared with these proportions, 14.8 per cent of deaths of males 15 years of age and over in the registration area of the United States were from consumption. Among occupations exposed to municipal dust those showing the highest mortality were drivers and teamsters, among whom 25.9 per cent of deaths were from consumption. Among occupations exposed to general organic dust, button makers showed the highest mortality, 37.8 per cent of deaths in this occupation being from consumption.

The statistics indicate that municipal and general organic dusts are less serious in their effects than metallic or mineral dust, but the consequences to health and life are sufficiently serious to demand most careful attention to the whole problem of dust prevention and removal at the point of origin.

CAPACITY OF STORM WATER SEWERS

Whether for Ordinary or Maximum Rainfall Rates—Changes in Conditions Due to Modern Paving and Increasing Values—Methods, Formulas and Data Used in Calculations in Greater New York

IN designing sewers for removing house wastes there is never any question but that their capacity should be sufficient to remove all the water contributed; but the designing of storm sewers seldom, if ever, is made with the idea of immediately removing all surface water during the heaviest exceptional rains, but the judgment of the designer is used in estimating how heavy a rainfall shall be provided for. A generation or two ago, when the sewerage system for Brooklyn, N. Y., was designed, a run off of one inch per hour was used in the calculations. This was years ago found to be insufficient, it having resulted in the flooding of numerous low sections of the city and the damaging of much property thereby. It is now generally considered that storm sewers should be designed to carry off the rainfall from heavy rains but not necessarily from downpours of unusual or very exceptional severity. This conclusion is based chiefly on two arguments; the first, that the cost of providing for such exceptional storms, with its interest and depreciation charges, would exceed the occasional damage done by them, and consequently that constructing such large conduits as would remove the heaviest rainfalls which ever occur would be uneconomical. Second, that the courts have held that a city is not bound to provide for exceptional conditions, but that in drainage as in other matters it can be held accountable for providing against only ordinary storms.

Recently some modification of this general idea appears to have been occasioned by developments in municipal conditions and also by modifications in the Court decisions. In the city of New York many suits brought against the city by property owners for damages due to the failure of sewers to promptly remove the water from excessive rainfalls have been decided in favor of the property owners. Moreover, the value of the property is increasing so that it no longer remains true in all sections that the damage resulting from flooded basements is

more than balanced by the saving in the cost of the sewers; especially in view of the fact that the highest property values are usually found in districts where the largest percentage of the rainfall reaches the sewer most promptly, because in these districts the impervious roofs cover a maximum percentage of the ground area, and the remaining area is practically all rendered approximately impervious by paved courts and a street and sidewalk covering which exposes not a square inch of soil for the admission of surface water. The engineers of New York city are, therefore, now considering the maximum recorded rainfalls in designing sewers for such districts.

The problem in connection with other districts also is less simple than it was a few years ago because of the growing tendency to adopt impervious street pavements, which greatly increase the percentage of run-off from all rains. Even suburban residence streets are adopting tar-treated roadways, which are much less pervious than the ordinary macadam roads which prevailed a few years ago. This, combined with the desirability of providing for the future extension of asphalt and other impervious pavements with the growth of the business and more thickly settled portions of each town or section of a city, all argue for increased sizes of storm water sewers.

In this connection arises a new line of consideration and calculation, namely, whether or not it would be economical to build at the present time, in districts now thinly populated and with no improved pavements, storm sewers sufficient to provide for conditions of twenty-five years or more in the future; or whether it would not be more economical to provide smaller sewers which may be outgrown within the next few years, and then replace or supplement these with larger sewers. Aside from the ordinary considerations of economy, there often arises the question as to whether the property can at present afford to pay for sewers which will be ample for the next

TABLE SHOWING METHOD AND ELEMENTS USED FOR SEWER DESIGN IN EACH BOROUGH

ITEM	MANHATTAN	BROOKLYN	THE BRONX	QUEENS	RICHMOND
RUN OFF FORMULA	HERING'S	MC MATH'S	RATIONAL: $Q = CIA^*$	RATIONAL: ADDITIVE	RATIONAL: $Q = CIA^*$
MAXIMUM RAINFALL RATE PROVIDED FOR	2 IN. PER HOUR	3 IN. PER HOUR FOR 30 MIN.	$I = 120 \div (T+30)^{**}$	$I = (12.37 - 29.85) \div (T+4.19)^{**}$ FOLLOWING A 10 MIN. RAINFALL AT RATE OF 3 IN. PER HOUR	$I = 105 \div (T+25)^{**}$ FOLLOWING A 5 MIN. RAINFALL AT THE RATE OF 3.5 IN. PER HOUR
ALLOWANCE FOR IMPERVIOUS SURFACE PER CENT.	50 TO 80	50 TO 75	14 TO 75 †	31 TO 81 ††	36 TO 82
" " GROUND WATER ADMITTED	—	VARIABLE, 0 TO 0.003 CUB. FT. PER SEC. PER ACRE	NOT CONSIDERED FOR COMB'D 1/2 CAP. FOR SANITARY	20,000 TO 75,000 GAL'S. PER MILE PER DAY	NOT CONSIDERED FOR COMB'D 10% TO 30% MAX. FLOW SAN'TY
ASSUMED POPULATION PER ACRE	CENSUS	100 UPWARDS	100 UPWARDS	50 TO 125	40 TO 160
ASSUMED DRY WEATHER FLOW PER CAPITA IN GALLONS	WATER CONSUMED	100 WITH DAILY VARIATION ACCORDING TO CONSUMPTION	125 WITH 75% DISCHARGED IN 12 HOURS	75 TO 125	125 WITH 70% DISCHARGED IN 10 HOURS
DILUTION OF MAX. SANITARY FLOW BEFORE OVERFLOWING	—	2 TO 4	1/6 STORM, NOT MORE THAN 3 TO 10% SEWAGE IN OVERFLOW	1 1/2 TO 6	2
SEWER CAPACITY FORMULA	KUTTER	KUTTER	KUTTER	KUTTER	KUTTER
VALUE OF n					
PIPE	.013	.013	.011 TO .013	.013	.013
BRICK	.013	.015	.015	.015	.013 TO .015
CONCRETE	.013	.015 †	.014	.015	.011 ††
SEWER VELOCITY IN FT. PER SEC.					
PIPE MINIMUM	—	2.0	2.5	2.5	3.0
" MAXIMUM	—	12.0	13.0	NOT CONSIDERED	12.0
BRICK & CONCRETE MINIMUM	—	2.0	2.5	4.0	3.0
" " " MAXIMUM	—	12.0	15.0	15.0	14.0
SIZES USED FOR PIPE SEWERS, MINIMUM SANITARY	12 IN.	8 IN.	8 IN.	8 IN.	6 IN.
" COMBINED	12 IN.	12 IN.	12 IN.	10 IN.	10 IN.
" MAXIMUM	15 IN.	24 IN.	30 IN.	24 IN.	20 IN.
MINIMUM SEWER COVERING ALLOWED	SAN'TY —, COMB'D 4 FT.	SAN'TY 7 FT., COMB'D 3 FT.	SAN'TY 4 FT., COMB'D 4 FT.	SAN'TY 4 FT., COMB'D 4 FT.	SAN'TY 3 FT., COMB'D 12 FT.
MAXIMUM STREET WIDTH FOR A SINGLE SEWER	100 FT.	80 FT.	80 FT.	100 FT.	100 FT.
METHOD USED FOR FLUSHING LATERALS	HAND	HAND	HAND & FLUSH TANKS	HAND	FLUSH TANKS

* Q = CUBIC FT. PER SEC., C = PERCENT OF IMPERVIOUSNESS, I = INTENSITY OF RAINFALL IN INCHES PER HOUR, A = AREA DRAINED IN ACRES. ** T = ELAPSED TIME IN MINUTES.

† BASED ON ANALYSIS OF FLOW IN SEVERAL CITIES, SEE VOL. LVIII, PAGE 458 TRANS. AM. S. C. E., INCLUDES VARIATIONS DUE TO DURATION OF STORMS AND TIME LENGTH OF ENTER SHED

†† BASED ON OGDEN'S ANALYSIS OF KUCHLING'S GENERAL INVESTIGATIONS.

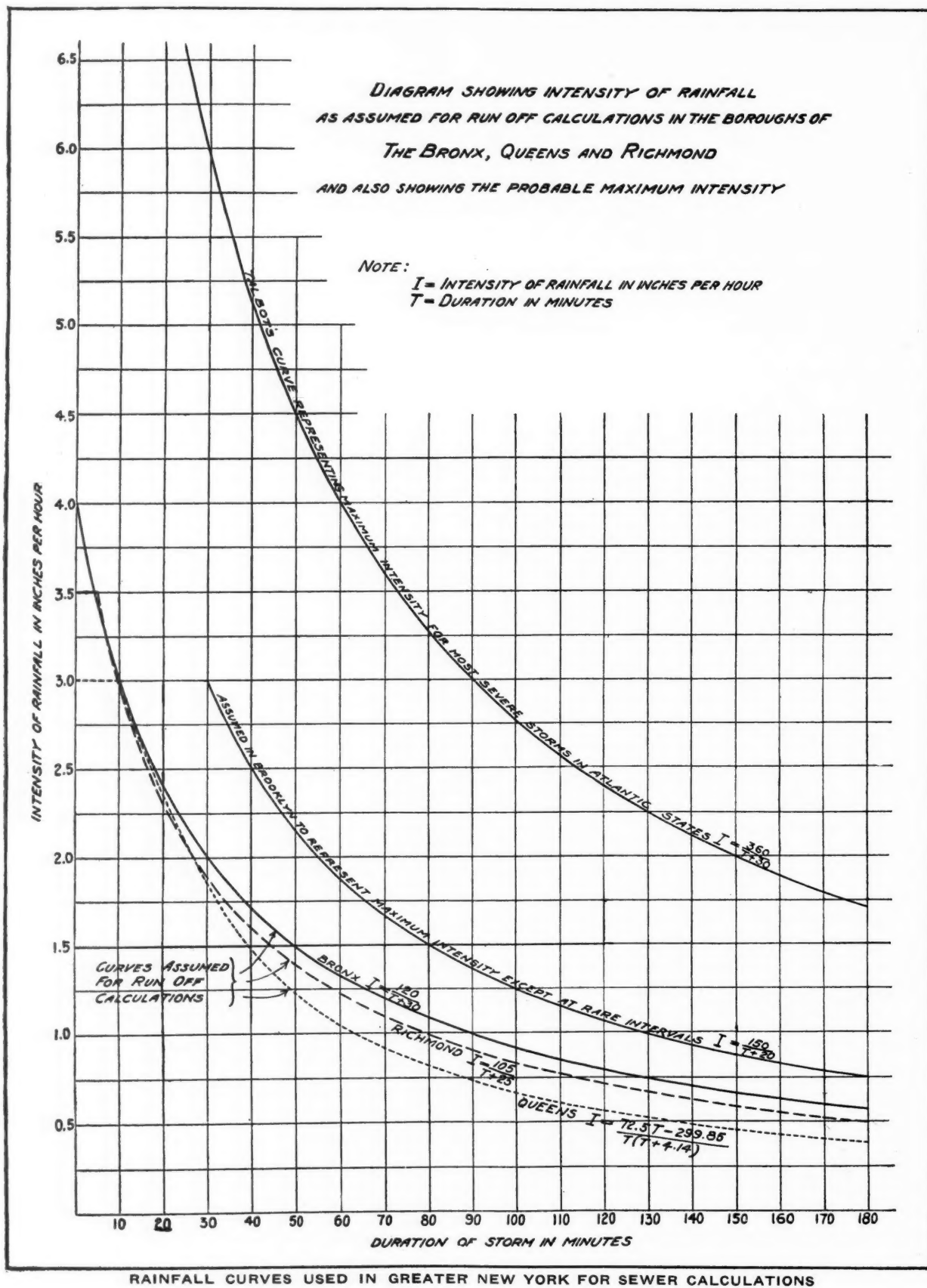
‡ USUALLY WITH STRATIFIED BRICK INVERT.

‡‡ FOR SMOOTH FINISH.

thirty to fifty years. In some of the outlying sections of Greater New York it has been found that to so provide, and to assess the cost of the sewers upon the district drained (as is required by law), would amount practically to confiscation of the property. We presume that in general, and especially in smaller cities, the solution would be to build no storm sewers at all in such a district. But in many instances a section of a given natural drainage area may be so built up as to be in great need of proper sewerage, and the topographical conditions which determine the limitations of the drainage area may

imperatively include undeveloped areas which must by law be held responsible for their share of the cost of the improvement.

Such conditions have been given considerable study by the engineers and other officials of New York, and the Board of Estimate and Apportionment in its last report makes certain recommendations for meeting such conditions. It had been generally held by the Courts that when property had once been assessed for storm sewers it could not later be assessed for any enlargement or duplication of these. It was, however,



suggested that, when such supplementary sewers be required and built, "an attempt be made to assess the cost of construction of the additional capacity required, on the ground that the original design was adequate for the conditions existing when it was carried out, and that the re-enforcement could be considered as providing facilities not previously paid for." This view was accepted by the Board of Estimate and Apportionment in 1908 in connection with so-called relief sewers, and presumably is still entertained.

In this connection Mr. Arthur S. Tuttle, Engineer in Charge of the Division of Municipal Improvements of New York, says: "To clearly define the nature and responsibility of the city for sewer capacity provided, and to make it possible to provide facilities adequate only for the reasonable needs of the immediate future in undeveloped sections, where to assess for sewers of capacity large enough for the remote period when the smaller size would become inadequate would in many cases be equivalent to confiscation, it has been recommended that a note be incorporated on drainage area plans of the latter character and also on the form of resolution submitted for their approval, to the effect that 'The sewers shown on this drainage plan are intended to have a capacity adequate for the reasonable needs of the drainage district for a limited period, and are not intended to be of adequate size for immediately removing storm water when the precipitation is at an abnormal rate or when the drainage area shall have become largely or fully improved. The capacity has been thus restricted for the purpose of keeping the cost within limits which it is deemed may be now properly assessed upon the property benefited.' It is believed that this note, which it is proposed to incorporate in the records of all plans for territories where there is reason to believe that reinforcement will be later required, will clearly relieve the city from all damage claims, and if the principle can be considered to apply to plans previously adopted, as was clearly intended, it should be possible to hereafter successfully resist such claims."

The plan herein referred to is defended from a technical and economical point of view on the theory and argument that it can be demonstrated by figures that the ultimate economy would be greater in building a system of moderate capacity now and later supplementing this by another and probably larger conduit (although the combined cost of the two would undoubtedly be greater than that of one of equivalent capacity), than to build immediately a conduit of capacity sufficient for a far distant future when the adoption of more urban methods of street development will have greatly increased the run-off. In addition to this, even though the purely economical argument as above might be lacking, there is the further consideration that in many cases an owner can much better afford to make a payment of \$1,000 twenty-five years from now when his property is bringing in a high rental than to pay even \$100 when the rental value is very low or even non-existent.

While such considerations as the above may be held by some not to be of an engineering nature at all, it is indisputable that they enter vitally into the problem of sewer design, and since this design is in the hands of the engineer he is remiss in his duty if he does not recognize and carefully study them.

In calculating the size of storm water sewers in the different boroughs of Greater New York, different methods are employed, and the various formulas and other elements used in such sewer designing in each of them are shown in the accompanying table. It is seen here that four different formulas or methods are used in the five boroughs. That indicated as Hering's was developed by Dr. Rudolph Hering as the result of an investigation of New York conditions in 1887 and '88. McMath's formula is well known to those of our readers who have studied the theory of sewer flow. The "rational" method used in the Bronx and Richmond is practically that described and advocated by the editor of this journal in his work on "Sewerage," and the "rational additive" method is a modification of the latter by the adoption of certain refinements as developed by Mr. Carl H. Nordell, draftsman in the Sewer

Bureau of Queens Borough. The time required for the surface flow to reach the sewer over the street surface, roofs, etc. (which is used in applying the rational formula), is assumed to range from five to ten minutes in the Borough of Queens, while in Richmond it is taken to be equal to five minutes plus the time required to traverse the gutters.

The rainfall intensities used for calculating run-off under the rational method is determined from formulas which are represented graphically in the accompanying illustration. It is seen that they agree quite closely for periods of 30 minutes or less, although there is appreciable divergence for storm durations of one hour or more. To these curves is added one representing Prof. Talbot's formula for the maximum intensity of rainfall of the most severe rainstorms in the Atlantic States. It will be seen that this is just three times the intensities employed for the Bronx and even more than three times those employed in the other two boroughs; and is about 2.4 the intensity considered to represent in Brooklyn the maximum except for storms occurring at rare intervals. The difference between the Talbot curve and the others shows most clearly the added expense involved in providing sewers of a capacity for such infrequent storms rather than for those of more common occurrence.

DIBDIN SLATE BEDS

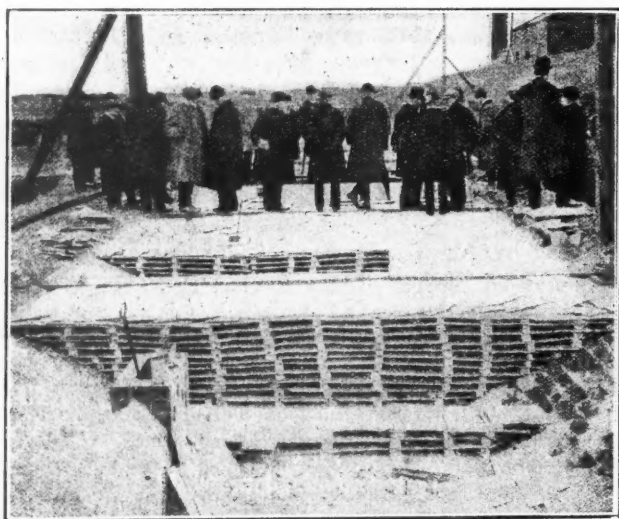
Discussed by Mr. Dibdin Himself—Humus Deposited Not Considered Sludge—Really Contact Beds, But More Easily Cleaned—Effluent Not Offensive

IN a paper read Oct. 6 before the Institute of Sanitary Engineers (England) Mr. W. J. Dibdin defended at some length the slate bed method of sewage treatment which was devised by him some years ago, has been adopted at several plants in England, and is being experimented with at Philadelphia and some other plants in this country. The paper is too lengthy for reproduction in full in these columns, but we will endeavor to give a synopsis of the ideas contained therein.

Mr. Dibdin first called attention to the fact that the Fifth Report of the Royal Commission, excerpts from which are now found in all English discussions of this question, was really out of date at the time it was published, so rapid is the progress in this direction. For instance, a report dated Aug. 7, 1908, refers to slate beds as "more preliminary settling or septic tanks than contact beds," and expresses no opinion as to the amount of sludge digestion which takes place in them, although they had been at work for over three years. On April 17, 1909, one of the Commissioners' chemists found the humus escaping from the slate beds at Devizes to be a "muddy liquid, black in color and possessing a strong seaweed, but not offensive odor. This sludge causes no nuisance during the process of drying, and when dry breaks up easily into a substance very much like ordinary soil. On one occasion a bed was opened at the side down to the bottom for the purpose of examining the deposit on the slates. The deposit averaged about $\frac{1}{2}$ inch; it was black and full of small red worms." The odor was described as being exactly like that from a damp cellar. The word "sludge" has been used to refer to the deposits in the slate bed, but Mr. Dibdin states that the idea conveyed ordinarily by this word is that of a foul-smelling, tenacious and filthy mass and not that of ordinary soil, and he, therefore, applies the word humus to the deposit in the slate beds. This material, he says, is a worked-out residue which is not offensive and could be used for grading low lands without any objectionable features. Mr. Dibdin, in the light of this and other considerations, therefore, considers that the action of slate beds is precisely similar to that of contact beds rather than that of settling tanks or septic tanks (with the advantage over these that they are much more easily cleaned of the contained humus), and that later experience has thus shown the statement in the Royal Commission's report to be erroneous.

This definition of sludge explains Mr. Dibdin's claim that there is no sludge to dispose of in the use of slate beds, since the material deposited is inoffensive humus matter only. As flushing shafts are provided, or other means for flushing out this deposit, leaving the slates clean, he claims that at a trifling cost for pumping effluent for flushing the beds can, at any time, be restored to their original condition, and consequently there is no excuse for permitting them to sludge up to such an extent as to interfere with their operation.

Mr. Dibdin defines the slate bed as an improved form of contact bed, which is filled with superposed layers of slate separated at convenient distances apart, about 1 to 3 inches, as may be necessary, by means of slate blocks, the whole thus forming an indestructible series of shelves on which the sewage suspended matters are deposited when the beds are filled with sewage. The bed is operated as is a contact bed, being allowed to stand full for two hours and then emptied slowly for fur-



SLATE BED AT BELFAST

ther treatment of the effluent by secondary purification of some kind. The matter so deposited undergoes biological action, which is carried on not by bacteria only, but also by worms and other low forms of animal life. There is also action in respect to the colloids during quiescence. There will ordinarily be necessity for a secondary treatment of the effluent, the extent of this varying with circumstances. As the slates are ordinarily about 2 inches apart, complete sedimentation of each 2-inch layer of sewage should take place in even less than the two hours ordinarily allowed. The filter is allowed to stand empty and fill with air for an hour or more after each filling, the micro-organisms requiring this for their existence and proper working. "The destruction of waste organic matters is not due to purely direct physical and chemical causes, but to digestion. On looking at a mass of the deposit on a slate which has been employed for some time in a bed the casual observer would notice nothing but a collection of *débris*. It is inoffensive to smell and dries rapidly and without producing offensive emanations. On heating the material a mass of minute worms will come to the surface, which are seen to be clearly aerobic organisms, and it is to a great extent their casts which form the inoffensive humus which escapes from the slate layers with the effluent." Examination under a microscope shows that this humus contains innumerable living organisms other than the worms. It is evident, therefore, that this material is "a hive of active and voracious living organisms from the lowest type of bacteria up to the highly organized worms, larvæ, etc., which, like a collection of animals in a zoological garden, feed upon the daily supply of food given to them," which organisms will continue acting so long as regularly fed, and in so doing destroy the waste organic matters.

When a bed is first put into operation this collection of organisms is represented by a few individuals only, and until the

"living earth" is fully developed the destructive action is slow, but the organisms develop rapidly and if the ratio of organisms, food and air supply are properly regulated, the action above described will soon become vigorous and continue indefinitely. In slate beds, as in other classes of contact beds, surface adhesion and gravitation will remove much of the colloidal matter. This matter also will be attacked and digested by the organisms. This action Mr. Dibdin has called gravitational, preferring this term to that of mechanical. It is shown by experience with contact beds, however, that this action is insufficient in the case of matters in complete or semi-solution, and thus the effluent will seldom be sufficiently pure for final discharge into a running stream. In the case of very dilute sewage, however, the effluent from the slate beds will stand the incubation test for four days. In fact, the author states that results described by Winslow and Phelps as being obtained with experimental sprinkler beds were not as good as those obtained by him with slate beds at High Wycombe. Moreover, the number of acres of slate beds, 8 feet deep, will need to be only 46 per cent as great as that of trickling filters, as shown by the relative amounts purified at Boston and at High Wycombe. At Belfast the suspended matter was reduced by slate beds from 20.4 to 0.93 grains per gallon, equal to 95.5 per cent reduction. When the beds were filled once daily the purification by the albuminoid ammonia test was equal to 47 per cent, and when filled three times daily to 34 per cent.

The most obvious advantage appearing and one of the chief ones claimed for the slate bed is the nature of the solid matter which is left to be disposed of, which solid matter collects at some part of every sewage disposal system, and which in the slate bed is practically inoffensive, so that the effluent left to be treated is inoffensive also.

A BUSINESS BASIS FOR ATTLEBOROUGH

THE Commissioners of the Attleborough, Mass., Water Department would like to have it included among those which operate on a business-like basis. Any Commissioners who are conducting their department economically and well desire and deserve credit for it. But with deficiencies hidden by annual appropriations and surplus absorbed by the general treasury; and with an unknown amount of service rendered free to the city at large, how can the most extravagant administration be distinguished from the least? The above-named commissioners have the following to say in their latest report:

We again call attention to the desirability of apportioning the assessment for water service on a more equitable basis than now exists. At present, except for the direct contribution of the town in amount equal to the difference between income from consumers and the expenses of the department and not determined by any method which might express the benefit derived by the town as a whole, the department is dependent for income on the consumers. That this is not a rational apportionment of the assessment for water service is at once apparent when it is realized that one-half of the actual cost of the system is due to provision for fire protection. In other words, if the system had been installed for domestic and manufacturing service alone the rates to consumers could be cut to about one-half. In 1907 the consumers paid 96 per cent of the expenses of the department. It must be obvious that this basis does not express the value of the service to individuals in fire protection and that many properties which use little or no water are deriving benefits for which no return is made. A much more logical method would be to collect a portion of the income in the ratio of valuation and the rest from consumers in proportion to actual use.

The first can be accomplished from a payment by the town to the department of a certain yearly sum for each hydrant, as would be the case if a private water company were controlling the works. The result would make possible a corresponding reduction of the rates charged consumers and the suggested rearrangement does not imply any increased revenue, but merely a redistribution on a more logical basis. It is further to be noted that no credit is given the department for public water used for street sprinkling and other purposes and amounting during the summer to 15 per cent of the total water pumped. It is, therefore, evident that any contribution which the town has made to the income of the department is merely a return for services rendered and much less than would be the case if all public water were paid for at meter rates and an allowance made for fire protection in the form of hydrant rental.

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A. PRESCOTT FOLWELL, Editor
J. H. DONNELLY, F. E. PUFFER, Assistant Editors

Business Department

H. M. SWETLAND, President
J. T. MORRIS, Treasurer M. J. SWETLAND, Secretary
G. E. SLY, Advertising Manager
S. W. HUME, Western Representative, 1664 Monadnock Block,
Chicago

Telephone, 2046 Bryant, New York

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NOVEMBER 10, 1909.

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Sewer Pipe Material

WHEN we consider that thousands of miles of sewers are built every year—how many thousand it is impossible to say—costing tens of millions of dollars, the important part which they play in the sanitary welfare of our cities, and the serious catastrophe which would be occasioned by any considerable deterioration in them, the importance of care in selecting the materials to be used in their construction needs no further argument. Fortunately the vitrified pipe, which has ordinarily been used for the smaller sizes—36 inches and below—has seldom been known to fail, unless through faults of sewer construction. It, of course, possesses some undesirable features,

the most important probably being the difficulty of obtaining tight joints and the slight departure from truly circular section and straightness of barrel which is found in most of them. But altogether the material has proved very satisfactory and has stood well the test of time.

But if there is another material available which would prove more satisfactory it is very important that this be known and taken advantage of. There are other materials which have been and are occasionally used. Iron is generally employed where strength and certainty of tight joints are required, but it is too expensive for general use. Wood has advantages, such as cheapness and flexibility, adapting it to certain conditions, but is unsanitary because of its porousness and is not durable. Cement pipe has been used for years, but its use outside of one or two cities did not increase materially until the present phenomenal growth in the use of concrete for all kinds of structures stimulated the adoption of it for sewers also.

But there are many who believe that it is a mistake to use cement pipes for sewers, and they cite both experience and theory in support of their contentions. If they are correct it is most important that the fact be established and generally recognized at once, before cities invest further sums in sewers whose collapse would not only mean a financial loss but would at once produce intolerable and dangerously unsanitary conditions.

In making a choice of material several points must be carefully considered and weighed as to their relative importance; among these being first cost and expense of maintenance, efficiency as a sewage conduit, water-tightness of the conduit as a whole, objections from a sanitary point of view, durability and others which are largely practical rather than theoretical.

Engineers and others here and there are acquiring experiences on this subject, and occasional relations of these and expressions of opinion find their way into print, but with no mutual connection or attempt at crystallizing knowledge and opinion. It is very important that something like unanimity of opinion on this point be brought about; and as a preliminary to this it is necessary that an exchange of views be had. We open our columns to such exchange, and most urgently request that all who have information on the subject contribute it to the general fund.

Water Works Finances

STILL another city, Colorado Springs, Col., is being asked by its Water Committee to place the finances of the water department upon a business-like financial basis. In the 1908 report the committee says: "With reference to the financial statement, it would seem that while the revenues will probably continue to increase, this department should be credited with all the water used, and to this end it would seem that each of the other departments of the city should carry an annual charge for the amount of water taken from the system and this department credited therewith. * * * The history of the operations of the system clearly proves that the financial policy that has been pursued in the past, whereby the excess revenue of the water department has been turned into the general funds, was a serious mistake, and it is to be hoped that this will soon be recognized and some better financial plan adopted."

In another part of the report it is stated that the department furnished free during 1908 the following quantities of water, which they have estimated to be worth the accompanying amounts: Public parks, 75,400,000 gallons, value \$4,524. Street sprinkling by street cars, 33,000,000, and by wagons, 19,540,000 gallons, a total of 52,540,000 gallons, worth \$3,751. Sewer flushing, 753,000 gallons. City Hall and city barns, water valued at \$282. Fire hydrants, 408 at \$30 rental, \$12,240. Fire department houses, service estimated at \$101. Horse and drinking fountains, 31,250,000 gallons, value \$1,875. Libraries, hospitals, etc., \$647.79, and churches about \$500. These, with a few miscellaneous items, make a total value of about \$23,947. In addition to this, the department credits itself with about 624,000.-

000 gallons of water used in sprinkling the lawns and gardens of 7,489 homes, valued at \$5 each, or \$37,445. The actual cash receipts were \$115,216.98 from flat rates and \$22,472.05 from metered rates, which, together with \$5,491.59 from other sources, give a total of \$143,180.62. The water furnished free for other than lawns and gardens was, therefore, about one-sixth of the amount paid for; or, including sprinkling of lawns and gardens, was about 43 per cent of that amount. The former would be sufficient to pay about one-third of the interest on the outstanding bonds, and the latter sufficient for almost the entire interest.

PURIFICATION BY STORAGE

An illustration of the beneficial effect which is frequently obtained by storage of water is given in a report of Mr. Desmond Fitzgerald, of Boston, Mass., concerning the water supply in the city of Manchester, N. H. The supply of this city is taken from the outlet of a lake, which is in reality two lakes with a narrow connecting link or neck. Describing the conditions, Mr. Fitzgerald said:

By far the greater portion of the water supply to the Massabesic Lake enters Front Pond through the village of Auburn. The color of this water at the time of my examination is represented by the figures 0.76 on the scale adopted by the Metropolitan Water Works of Massachusetts. At the same time the color of the water at Deer Neck connecting the two ponds is represented by the figures 0.47, showing a reduction of 38 per cent in its passage through Front Pond. At the same time the color of the water at the outlet of Back Pond at the low service pumping station is represented by the figures 0.27, showing a further reduction of 43 per cent in the passage through Back Pond.

As the color of New England waters is largely representative of the organic matter which they contain we have here an excellent measure of the beneficial effects of storage in improving the quality of the water in its passage through the two ponds, due to its exposure to the sun and air. It is well known to all water supply experts that the longer surface water is stored under these conditions the better it becomes. The low service pumping station is situated in the best possible position for securing the advantages that arise from the effects of storage, and an important factor in the good quality of the Manchester water arises from the long delay in both ponds in the passage of the water from its influent at Auburn to the outlet of Back Pond. A study of the chemical analyses confirms this view. The reduction in free ammonia in the passage from the center of Front Pond to the center of Back Pond is something over 30 per cent, and of the albuminoid ammonia 13 per cent.

MUNICIPAL WATER FURNISHED BY TANK CARS

DENISON, TEX., is congratulating itself on its ability, during this season when so many Texas cities have been practically without any public water supply, not only to supply its own citizens but to help out those of many other cities within a considerable radius. During the drought three trains left Denison daily, each carrying from 20 to 30 cars of water into the adjacent county. Most, if not all, of the towns so supplied relied upon public systems impounding surface water or upon private wells; while Denison's supply is from deep wells. Two of these water trains were run over the lines of the Missouri, Kansas & Texas Railroad and the third was operated by the Texas & Pacific road. It is reported that about 250,000 gallons per day were distributed in this way. These trains made regular trips, one at night and one during the day, and consisted of engine tenders, oil tanks and in some cases large wooden vats set on flat cars. At each of the several towns which were being supplied the water was either siphoned off or drawn by a hose connected at the bottom of the tank, into receptacles brought by the citizens individually or by the community at large. The water was furnished to the cities at the rate of 15 cents per thousand gallons, f.o.b. Denison, and the railroads placed very low freight rates on the transportation of it.

In connection with the wells, Denison has a reservoir of 700 million gallons. The regular supply from the wells is sufficient to meet the daily consumption of the citizens, but the reservoir is necessary, among other things, to provide for the heavy

draft made by the railroads, which obtain all their water from this system. In addition to this, the city is building another reservoir for impounding water from a shed of eleven square miles, which reservoir will have a capacity of over 1,300 million gallons.

CLOSING STREETS DURING PAVING

A FATAL accident in Washington, caused by a street having been torn up on account of repaving, has led to considerable discussion concerning the policy of making impassible both sides of the street at the same time where there is a car track. Capt. E. M. Markham, assistant engineer in charge of street work in the District, stated it to be the deliberate policy of the Department to close both sides of the street at once when repairs or improvements were to be made on both sides, since it was believed that there was really less danger in this than in closing only one side at a time. Another reason for this, and probably the determining one, is that such partial construction increases the cost considerably and the time for completing the work and having the street torn up by at least 150 per cent, in Captain Markham's opinion. One of the chief elements of danger in partially closing he believes to be the fact that traffic moving in both directions on the narrow roadway between the curb and trolley cars would be apt to result in collision between vehicles and especially between carriages and street cars. One of the difficulties connected with closing both sides of a street containing tracks is that, as the latter are left unobstructed for the passage of cars, carriages and other vehicles will endeavor to pass through the block by using the tracks. If while doing so it becomes necessary to turn out for a car there would, of course, be danger of accident.

As a result of the discussion of this subject by the public press, following the accident referred to, Commissioner Macfarland is said to favor the adoption of a rule that both sides of a street upon which street cars run should not be closed at the same time; this rule to be imperatively followed unless that portion of the street or road in question can be closed to all traffic except the street cars themselves. "In the city proper," said he, "this can be done without serious interference with vehicular traffic because vehicles can take parallel streets. The saving effected by prosecuting the work on both sides of the street at once would be sufficient to warrant the temporary diversion of traffic to other streets.

"But in the case of suburban streets, avenues and roads it may well be that there is no parallel highway or one near enough to be available. In that case I should say that the work should be done only on one side of the road at once."

This entire closing of the street would, as Commissioner Macfarland says, offers little serious inconvenience to through travel; but it might well happen that several stores, manufacturing enterprises or even private residences might be seriously inconvenienced by total inability of teams to enter the block on which they are located, this lasting for a period of a week or more, the minimum time required for grading and laying concrete foundation and permitting the same to set. Altogether the problem is a most difficult one and the officials in many cities, Chicago for instance, have found it well nigh impossible to keep traffic off streets for this length of time when an apparently practicable roadway was offered by concrete which had partially set, and especially in the case of brick pavements where grout filler had been used, which it was desired to give time for thorough setting before permitting travel to use the pavement. The danger referred to by Captain Markham could certainly be met by permitting only traffic in one direction to use the side of the street left open to travel, which would suffice to give access to buildings on that side. It would then be a question whether the increased cost (which we do not believe would always be greatly increased by paving one-half of the street at a time) is more than balanced by the inconvenience caused by the entire closing of the street as compared with the partial closing for a considerably longer period.

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance

ROADS AND PAVEMENTS

Systematic Paving a Charter Feature

Baltimore, Md.—One of the most important suggestions which the Charter Commission has yet undertaken to carry out is that calling for a systematic municipal paving scheme. A committee consisting of George R. Gaither, B. Howell Griswold, Jr., and Edwin G. Baetjer is now at work on this suggestion, and it is considering the ideas expressed in a large number of letters which the Commission has received along this line.

Mayor Again Favors Municipal Paving Plant

Buffalo, N. Y.—Mayor John N. Adam has sent the following communication to the Aldermen:

During April, May and June of this year, over 90,000 square yards of asphalt pavement repairs were made at a cost of 95 cents a square yard. In the budget for the current year, adopted May 1, \$130,000 is appropriated for the same work during the present fiscal year. This was available on July 1, yet no repairs were made from that date to August 13. Probably none were made because no contract had been made. Why was no contract made? Could not specifications have been drawn, bids asked for and submitted to Your Honorable Body long before the first of July? No bids were reported until the 26th of July, then as Your Honorable Body was about to adjourn for the summer recess a contract was approved, no one knowing what the bid would figure out per square yard. How has it turned out? From August 13 to the end of September, 96,045 square yards of patches were made.

Labor cost	\$31,694.81
Asphalt cost	49,640.37
Blinder	13,251.38
Cement	1,169.28
Total	\$95,755.84

Practically \$1 a square yard. The last voucher figures \$1.03. This area would have cost in Washington, D. C., under contract, about \$20,000 less. In Toronto, done by the city, the work would have been done still cheaper. We could save in one year more than the cost of a repair plant, and then do almost twice the amount of work for the same amount of money. A vote for a plant is a vote for economy. Can Buffalo ever prosper or progress if city officials are indifferent to the taxpayers' interests?

Asphalt at Francis, Okla.

Francis, Okla.—A fine deposit of asphalt has been discovered within a mile of Francis. It is of about the same quality as that being mined near Ada. It begins to look like Pontotoc County is situated over a bed of this material, and that hereafter this section, and not Trinidad, is going to supply the paving material of the United States.

Lay Cement Curb and Sidewalks in One Process

Dayton, O.—City Engineer F. J. Ceallarius has changed the specifications for cement walks and curbing with a view to avoiding cracking of the surface. The walks will hereafter be laid in solid blocks of the same mixture of constituents throughout. Hitherto the walks have been laid in two layers—a base of cement, sand and gravel or broken stone and a surface mixture of sand and cement. The new specifications will be adopted in constructing the curbing on Wayne avenue.

Jacksonville's Sidewalk Record

Jacksonville, Fla.—Eighteen miles of concrete sidewalks constructed in five months was the report made to the Board of Public Works by the sidewalk contracting firm which has the contract for putting down walks all over the city where they are now needed. This amount of sidewalk building is in addition to the large amount done for property owners by private contract. The engineers estimate that fully as much more is to be done before all of the city is covered with good walks, replacing the wooden and brick ones in the residence sections of the city, as well as in portions where no walks existed at all. It is believed that when all of the work is completed there will be fully 50 miles of new concrete walks in the city.

Building Fine Roads in Wisconsin

Janesville, Wis.—When the present season of road building is finished Rock County will have approximately 50 miles of improved roads completed within the last two years, at a cost of \$51,500. While some of the roads have been built at a cost of \$600 a mile, others have cost as high as \$3,000, bringing the average to about \$1,100 for every lineal mile of work. In road building Rock County stands well to the fore in the State. It owns two road rollers—one



Courtesy Janesville Gazette

A WISCONSIN ROAD BUILDER'S OUTFIT

a steam and one a gasoline—and under the direction of County Commissioner of Highways H. L. Skavlem last year completed 23 miles of good roads, and this year expects to finish 25. The illustration shows a contractor's outfit, consisting of traction engine and wagons which have been very successful in hauling supplies from points a long distance from the work.

Chipping Wooden Blocks

Lexington, Ky.—In order to prevent horses from slipping on the creosote blocks at the corner of Upper and Main streets workmen have chipped the blocks to make them rough so that in wet weather there will not be so much danger of falling. During the wet weather of the past few weeks hardly has a day passed that several horses have not slipped on the street at both a risk to the driver and the animal. This step will add a great deal to the safety of horses and the cost is small.

New Street Signs

Newport, R. I.—There is no reason for anybody getting lost in the city of Newport at the present time, for every byway and highway in the city has been labeled with a pretty blue and white enameled sign. Even the little lanes and alleys in many instances have been labeled, and since the signs were put up many old Newporters have acknowledged that they never before knew what the names of some of these places were.

St. Augustine Repairs Its Asphalt

St. Augustine, Fla.—The asphalt plant and all materials have been received and the work of repairing the asphalt streets will commence. With the plant on hand the work of repairing the many miles of asphalt pavements will be commenced at once and pushed steadily until they are again in first-class condition. In making these repairs only one-half of the street will be torn up for repairs at a time so that traffic will be but little, if any, interrupted. The brick patches will be removed from the asphalt pavements and the bricks removed will be used in continuing the brick pavements later. King street will be the first to be repaired, and as soon as this is finished the other asphalt streets will be taken in charge.

Street Openings Charged on Yardage Basis

Scranton, Pa.—The Public Works Committee reduced the size of the sum which must be deposited by concerns when about to open city highways for work on gas, steam or water piping, arranging the prices on the square yard instead of on a job basis. The schedule is as follows: Asphalt, from \$25 per job to \$3 per yard; brick, the same; Belgian block, the same; cobblestone, from \$10 per job to \$2 per square yard; macadam, from \$8 to \$1.50; dirt, \$1.

Need Wider Streets

Schenectady, N. Y.—A report regarding the traffic situation in this city is before the Public Service Commission, and it is probable that the Commission will ask the co-operation of the municipal administration, the Schenectady Railway Company and the citizens in correcting certain faults. Commissioners James E. Sague and Thomas M. Osborne believe that the narrow streets are a serious obstacle to the handling of traffic and that for the best interests of the city in the future the streets should be widened. A conference will be held next month of the citizens and officials of the railway. At that time the report of the experts will be made public and the recommendation discussed.

Must Make Deposit Before Cutting Pavement

Scranton, Pa.—Hereafter when individual property holders or contractors desire to tear up the paved streets to suit their convenience they must first deposit a sufficient sum of money with the city officials to defray the expense of putting the streets in condition again.

Bad Streets Costly

York, Pa.—Bad streets in the city have lost to the city one of its industries. The Heany Lamp Company has made good its threat to move from that place because of the poor streets. It has been decided to move the plant to Hoboken, N. J.

Street Work in Washington

Washington, D. C.—In his annual report Engineer of Highways C. B. Hunt shows that there are 453.58 miles of pavement of all kinds in the District, an increase of about three miles over one year ago. The mileage of the several kinds of pavement is shown by the report to be as follows: 145.51 miles of asphalt and coal tar this year, as compared with 141.63 miles last year; 28.32 miles of asphalt block this year, against 27.96; about one mile of vitrified block pavement, the same as last year; 25.42 miles of granite, the same as last year; 6.73 miles of cobblestone, as against 7.2 miles last year; 83.54 miles of macadam, as against 83.11 miles last year; 163.56 miles of gravel and unimproved, as against 164.27 last year. To eliminate all grade crossings of steam railroad tracks in the District Engineer Hunt recommends that the Commissioners secure appropriations in successive years to insure the early completion of the work.

SEWERAGE AND SANITATION

Health Department Surveying Sleeping Rooms

Chicago, Ill.—At the request of the Immigration Bureau at Washington the Chicago Health Department has begun the measurement of 30,000 tenement rooms, which previously have been inspected by Government agents. Chief Sanitary Inspector Charles B. Ball said many rooms measure only 5 x 6 feet and some, in which several children sleep, measure 4 x 6 feet. The task follows a similar undertaking in New York, where thousands of tenement rooms have been measured.

All Sewers Found to Be on Record

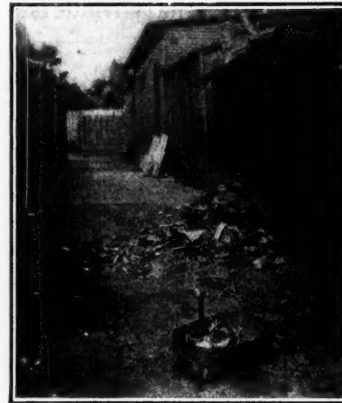
Dayton, O.—A goodly portion of the storm sewer system of the city has been traced by the attachés of the City Engineering Department in the effort to obtain a complete record of all these drains. It was expected that quite a number of sewers not on the records in the office would be located, but so far none has been run into. One man is being used to make trips through all the large pipes.

More Money for Bulletin

Indianapolis, Ind.—An agitation has been started in State health official circles that may result in a request that the next General Assembly modify the law relating to the annual report of the State Board of Health so as to enable the Board to spend less money on that publication and to spend more on the monthly bulletin issued by the Board. The monthly publications reach the people more directly than do the annual reports, and are held to be of much more value in the general educational crusade conducted by the Board than are the latter, which are very largely statistical.

"White Plague Alley" Cleaned Up

Washington, D. C.—"White Plague Alley" has undergone a cleaning the like of which it has never had in its long history. It is the alley which the Health Department some weeks



Courtesy Washington Star

WHITE PLAGUE ALLEY

ago discovered was developing cases of tuberculosis at a startling rate. By a house-to-house inspection and the serving of notices upon the owners of the plague spots the Health Officers have accomplished what the police could not do. In return for their compliance with orders the officials agreed not to publish the name of the alley. If the cleanliness is not maintained, however, the name of the place will be given to the press. The alley is located between two lettered streets and is but

a block long, with two small blind alleys at each end. The houses are about equally divided between weatherboard and brick and built together in a compact mass. Between some of the houses at intervals are located stables with the gateways from the stable yard opening directly into the alley within several feet of front doors. In the two blind alleys are located about half a dozen wooden shacks or shanties, the backs of which are jammed up against the alley houses or rear fences.

To Make Tidal Tests

New Bedford, Mass.—To ascertain the action of the tides at points at about 3,000 feet southeast, southwest and south of Clarks Point, preparatory to making a report on the efficiency of the plan for an intercepting sewer suggested as the solution of the problem of the sewage nuisance at Clarks Cove, City Engineer William F. Williams will in a few days locate floats at various places off the point.

Peculiar Sewer Assessment Case

Pittsburg, Pa.—An odd point was raised in the Supreme Court during the argument of the appeal of Charles M. Clarke from a decree of Common Pleas No. 2 fixing an assessment for building a sewer. The city built two sewers on Murtland avenue, one under each sidewalk, and two on Willard street in the same manner. Clarke was assessed for benefits. The four sewers lead into one 15-inch sewer on Reynolds street. Clarke's attorneys raised the point that as the sewer on Reynolds street carries off the sewage, one sewer would have been sufficient, and consequently Clarke should not be asked to pay except on the basis of the cost of one sewer. The city holds that it has the right to separate the sewers, as this proves advantageous in making house connections and preserves the paving of the roadway.

Preparing for Sewerage Campaign

St. Augustine, Fla.—The special committee in charge of arranging preliminary plans for an active campaign in the interest of a bonding issue to procure a sewerage system for St. Augustine held a meeting and gathered information which will later be given publicity in pamphlet form for the enlightenment of the people of the city. This committee is headed by Mayor Masters, who has associated with him on the committee two active workers in City Health Officer J. M. Irwin and Mr. F. A. Rolleston. As soon as this committee has gotten all of the necessary information as to cost of material and construction and the necessary taxation for the sewerage system they will be published and given free distribution. It is probable that public meetings will be held later on, when the advantages and cost of the improved sanitary measure will be given free discussion.

Plan to Improve Efficiency of Health Board

Des Moines, Ia.—In a paper read to the State Board of Health, Dr. Eiker, one of the members, recommended that its membership be decreased to three and that they be required to devote all of their time to the work.

WATER SUPPLY

Raw Water Pumped into Reservoir

Burlington, Vt.—This city has been through a severe water scare. A high rate of typhoid and a statement from the Health Officer and State Chemists to the effect that the water supply was contaminated by sewage bacteria set the Aldermanic wheels in motion. An investigation tended to lay the blame on the workmen at the filter plant. One of them is said to have on several occasions allowed the raw water to run into the city reservoir without applying the filter process. The city has within three years expended \$50,000 in fitting up a mechanical filter plant, and an expert has been sent for to ascertain if any defect exists. Water samples tested later by the State Laboratory are pronounced pure.

Chester Opens Water War

Chester, Pa.—Both branches of Councils have adopted a resolution directing the Mayor and the City Solicitor to take such action before the courts and the State Department of Health as will lead toward remedying the condition of the city's water supply and insure the community an abundant supply of pure and wholesome water. James R. Bagshaw, member of Select Council, contended that the water furnished by the new Chester Water Company has been for months past so impregnated with salt that it is not only unfit for domestic use, but is destructive to machinery; is ill-appearing and bad tasting and injurious to the health, welfare and progress of the citizens. Samuel E. Turner, President of Select Council, also made a vigorous attack on the water company's method of charging for water in advance, imposing interest and making excessive charges for fire hydrants. He stated that he had communicated with the clerks of other cities throughout the State and ascertained that none of them was paying the excessive rate of \$40 a year each for fireplugs, as Chester does. Johnstown, he said, paid \$25; Williamsport, \$10; Wilkes-Barre, \$20; Easton and York, no charge.

Paint Flavor in City Water

Newark, N. J.—Investigation regarding complaints to the Water Department by residents of the Forest Hill section that the water had been flavored the past few days with an oily taste has disclosed that the probable cause is the recent painting of the screen tower in the Bellevue reservoir with an asphaltic composition. A microscopic examination of the water, however, has failed to show any deterioration in the standard of purity, and the condition that had been noticed is said to have been remedied. While the reservoir was being cleaned, the supply being fed in the meantime at the gatehouse cut-off, the screen tower was painted and let into the reservoir after it had been flushed, and the paint found its way into the mains through partially open sluices. With the stopping of the leakage danger of a recurrence of the condition is obviated.

Trees to Protect Water

Portland, Ore.—One ton of Douglas fir seeds, capable of making 80,000,000 big fir trees, will be planted shortly by the National Forest Service in the forests of the State. Fully one-third of this will be planted in the Bull Run National forest. Since the taking over of the forests through which flows the Bull Run River, the source of Portland's water supply, by the National Forest Service, efforts toward the increasing of the water supply of the city have been looked forward to. The reseeded of the slopes of the hills, it is expected, will result in the increase of the flow of water in the river to fully double its present capacity. This will protect the city water supply for the next 300 years.

To Stop Pipe Laying from New Jersey

Rutherford, N. J.—Addison Ely, counsel for the Hudson County Water Company, has been served with an order to show cause why an injunction should not be granted restraining said company and the J. M. Guffey Petroleum Company from dredging in the Kill von Kull to lay pipes to convey water from New Jersey to Staten Island. The order was obtained from Vice-Chancellor Walker upon the application of the Attorney-General.

City Water Stands Test

Elmira, N. Y.—James A. Caird, of Troy, the bacteriologist who watches the condition of Elmira's city water, stated that the water is higher than 99.5 per cent pure and that the fraction of 1 per cent of impurity that remains is albuminous and mineral. Professor Caird stated that the efficiency of the local filter plant has gone far beyond the fondest expectations of the men in charge. This water is so pure that it tends to taste flat. It tastes almost as flat as boiled water because of its purity. He believes that the origin of practically all of the local typhoid cases has been traced to the raw river water taken into their systems by swimmers.

City Enjoined by Water Company

Peoria, Ill.—Judge Otis J. Humphrey, sitting on the Federal bench in this district, issued a temporary injunction restraining the city of Peoria or any of its officers from enforcing the ordinance recently enacted by the Council giving any citizen the right to install a meter and turn on the water without getting a permit from the company.

STREET LIGHTING AND POWER

Municipal Plant Reduces Price of Gas

Alexandria, Va.—Beginning December 1 the price of gas supplied by the municipal plant will be \$1 per 1,000 cubic feet, provided the bills are paid promptly. The present price of gas is \$1.30 per 1,000 feet, with a discount of 20 cents for prompt payment. The ordinance provides, however, that no monthly consumer shall use less than 200 feet and no quarterly consumer less than 600 feet; otherwise they will be compelled to pay for those respective number of feet.

Would Condemn Land for Transmission Line

Anderson, Ind.—In order to fulfill a contract to furnish electric light for the town of Frankton, six miles from Elwood, the Elwood Electric Light Company has instituted proceedings in court for condemnation and appropriation of real estate for right-of-way across farms where the light company has been unable to get permission to cross with its wires. The Frankton Town Board has contracted with the Elwood Company for light. The light plant at Frankton will be sold.

Three Plans for Municipal Lighting Plant

Baltimore, Md.—Superintendent Robert J. McCuen of the Department of Lamps and Lighting has prepared a report outlining three plans for a municipal lighting plant. One is to build a power plant on the Gunpowder River to utilize the overflow from the dam to be built as part of the water works system. This plan would cost \$281,250. The second calls for a plant on the waterfront at a cost of \$375,000. The third is to utilize the building formerly used as a garbage reduction plant. This plan would cost less than either of the others.

Unique Illumination Scheme to Be Carried Out at Reservoir

Rochester, N. Y.—Plans are being prepared by the Engineering Department of the Rochester Railway and Light Company, at the suggestion of City Engineer E. A. Fisher, for one of the most unique and effective illumination schemes in connection with Cobbs Hill reservoir ever carried out by a municipality. It is planned to make the crown of the hill, occupied by the reservoir, a blaze of light from 90 large electric lights, or 180 smaller globes, which will be hung from ornamental poles set either 20 or 40 feet apart around the entire reservoir. The poles will harmonize with the fence placed around the reservoir, but it has not been decided whether the poles will be placed in line with the fence or back of the cement walk which circles the reservoir just outside the enclosure. The reservoir property is being graded and laid out under the direction of a landscape gardener, and when completed will be one of the beauty spots of the city. Shrubs and bulbs are being planted, and by spring the slopes will be covered with flowering plants, similar to those seen in the parks of the city. The system of illumination will be distinctive and will be so arranged that the hill will be crowned with a diadem of electric lights blazing out through the darkness from one of the highest points in the section. It is expected that when the lights are placed the broad walks will prove a popular promenade.

FIRE AND POLICE

Finest Fire House in Maine

Bangor, Me.—Bangor is soon to have the finest fire station in the State, according to Chief Mason of the Fire Department, who says that Station 2, which is now being built on Main street, will on its completion surpass any of the stations of the various city Fire Departments in Maine from a point of modern equipment and convenience. Everything that is needed will be installed before the station is finished in order that no alterations will have to be made after the building is done.

Water Front Fire Fighters

Boston, Mass.—Engine 47, the new fireboat, will be stationed at the South Ferry drop in East Boston, the headquarters of the new water front fire district. Since the new boat went into commission Engine 44, the old fireboat, has been undergoing repairs. Engine 47 therefore was berthed at Central Wharf, the headquarters of Engine 44. A three-story building at the South Ferry slip, formerly used by the Ferry Department, has been fitted up for the accommodation of the crew of the new boat. On the ground



Courtesy Boston Herald

BOSTON'S NEW FIRE BOAT

floor there is a large, sunny lounging room, where the alarms sound. Two sets of double doors open from the room to within a few yards of the boat's anchorage. On the second floor are rooms for the Chief of the new district, the captain and lieutenant of the boat and shower baths for all. On the top floor is the dormitory, containing 13 beds, for the crew. There are sliding poles from floor to floor. There is even a pole from the roof to the third floor, as it is planned to have a garden on the top of the building in the spring.

New Fireboat Tested

Seattle, Wash.—The new fireboat, the "Duwamish," has had her first trial run. She was designed by McAllister & Bennett, naval architects, who also superintended her construction. Her hull was built by the Puget Sound Shipbuilding Company at Richmond Beach, and her machinery was furnished by the Fulton Machine Works of Seattle. She is 120 feet over all in length, 28 feet molded beam and 15 feet deep, with an indicated horsepower of 900. She is a twin screw boat and carries three American-La France fire pumps with a capacity of 9,000 gallons a minute at 200 pounds pressure. The largest fireboats in New York have a pump capacity of the same number of gallons, but at 150 pounds pressure. The "Duwamish" has four Mosher boilers, with a total heating surface of 9,000 square feet. She is an oil burner and made a speed of 12 miles an hour. The "Duwamish" has a monitor with a 5-inch tip on the pilot house, and one aft with a 4-inch tip. She has six such nozzles on the sides with 2-inch tips. In her run to tune up the engines she went from Alki Point to Four Mile Rock and around the bay several times. The new boat cost \$125,000.

New Motorcycle Service for Fire Department

Pittsburg, Pa.—The organization of a corps of motorcycle firemen, who shall also be electric linemen, is being considered by city officials. The plan is an elaborate one, and if selected Pittsburg will be the first city in the world to adopt it. The lineman cyclist is expected to get to the scene of action before any other men or apparatus. He will be provided with a long coil of rope, attached to which will be a heavy weight. In case there are any persons in the burning building his first duty will be to effect their rescue, which can be performed in a very simple and expeditious manner. Any expert lineman can toss the weight with rope attached through a window on the fourth or fifth story of a building. A rope ladder which the motorcyclist will carry with him can then be drawn up and a safe descent made. Before the firemen arrive the motorcyclist will also have opportunity to make a careful survey of the surroundings and be prepared to make the firemen a report when they arrive. The plan was devised by Elliot J. Denton, a telephone lineman, who performed heroic service in rescuing apparently doomed people a short time ago when a building collapsed. Director of Public Safety John M. Morin favors the adoption of the plan.

Firemen's Salaries Increased

Bridgeport, Conn.—A salary increase for practically the entire membership of the Fire Department has been voted by the Common Council. The increase amounts to about \$200 for each member, and will make a total addition of about \$23,000 to the expenses of the Department. The new ordinance divides the members of the Department into three grades, known as A, B and C, the latter the lowest, and all permanent drivers, hosemen, stokers, linemen, laddermen and tiller men appointed after the ordinance takes effect shall serve the first year in grade C, the next in grade B, and each succeeding year thereafter in grade A. Present members of the Department are graded according to their length of service in each of these three grades. The ordinance provides for reducing from one grade to another as a punishment for any offense coming under the discretion of the Board of Fire Commissioners. Section 2 provides: Commencing April 1, 1910, the yearly salaries of the members of the Fire Department shall be as follows: Captains, \$1,400; engineers, \$1,300; lieutenants, \$1,250, and Grade A drivers, hosemen, stokers, linemen, laddermen and tillermen, \$1,200; Grade B drivers, hosemen, stokers, linemen, laddermen and tillermen, \$1,100; Grade C drivers, hosemen, stokers, linemen, laddermen and tillermen, \$1,000.

Police Win Increased Pay

Jersey City, N. J.—The proposition to increase police salaries was carried by a vote of 25,000 to 6,000. The measure affects all patrolmen and roundsmen.

Kearny, N. J.—The question of granting an increase in the salaries of policemen was carried by a vote of nearly five to one.

Prefer Pensions to Salary Increase

Newton, Mass.—For an hour on a recent morning every section of Newton was without police protection, the 64 members of the Department having been summoned to police headquarters to discuss the controversy regarding pensions. The gathering was the result of a meeting of the committee which recently conferred with the Finance Committee of the Board of Aldermen regarding the passing of the act. What opposition was advanced to the acceptance of the act at the Aldermanic meeting was based on the claim that all of the patrolmen did not favor pensions, but that some desired, instead, an increase in salaries. The matter was put to a vote and every man was in favor of pensions.

Must Walk Chalk Line

Elizabeth, N. J.—Wearied with having men who have been arrested charged with intoxication solemnly vowing that they were perfectly sober, Judge Owen P. Mahon has decided hereafter to put them to a practical test by walking a chalk line. The line has been drawn the length of the court room, and the man who claims the police made a mistake in arresting him must walk the line. The court will decide if the accused is sober after viewing the performance.

GOVERNMENT AND FINANCE

This Mayor Is Economical

Battle Creek.—Mayor John W. Bailey has ordered the city's entire commercial account, some \$60,000, transferred to banks as a savings fund, on which the city can draw 4 per cent interest. As Bailey is preventing the city from spending much money, his banking scheme is counted on to help reduce the city debt at the rate of \$2,400 per year.

Voting Machines Tampered With

Buffalo, N. Y.—The Republican County Committee has offered a reward of \$1,000 for the arrest and conviction of every man that fastened a rubber band to the face of any voting machine used in the election. The rubber bands, it is alleged, were fastened to some pointers in such a way that they prevented the pointers from coming down when the voters pulled the Republican lever, thus making their vote for Mayor blank.

Would Exempt Cities from Damage Suits

Frankfort, Ky.—Mayors of twenty Kentucky towns will petition the Legislature to pass a bill exempting cities from damage suits. Concerted action will be taken by the Mayors of many of the larger cities and towns of Kentucky. This was decided upon at a meeting held at The Seelbach, Mayor Hume, of Frankfort, presiding. Under the laws of Kentucky neither the county nor State can be sued, but the cities and towns do not enjoy exemption. The number of suits filed against municipalities every year run up into the thousands, and hundreds of judgments awarded against cities where the parties suing were not entitled to damages. It is to remedy this evil that the Mayors have agreed on a bill to be presented to the next Legislature.

Olean, Ind., Forgets to Hold Election

Olean, Ind.—Olean, with 500 population, forgot all about the election for municipal officers and omitted to hold any. The town will be without officials when the terms of the Town Trustees expire, according to the present law.

Preparing to Collect Occupation Tax

Omaha, Neb.—The City Comptroller and his staff are anticipating no easy task in ascertaining just what the public service corporations are to pay into the city treasury under the occupation tax ordinance. The tax began to run September 1, and the first payment will be due December 1. "We propose to avail ourselves of the experience of other cities," said Deputy Comptroller Cosgrove. "We will get from the cities having similar laws any blanks or forms they may have in use, and also learn their methods of computing and segregating. In Omaha we are entitled to 3 per cent on all business, but we cannot get anything from business originating in Benson or Dundee of South Omaha, on the lines of the street car company. Then the gas company has a suboffice in South Omaha, but all gas goes from the receivers located in this city. So with the electric light and the telephone and water companies—there are various details to be given consideration. Former Councilman Zimman, who fathered the occupation tax ordinance, with Councilman Bridges, believes the city should employ a high-thing like \$5,000, to devote his attention exclusively to the collection of occupation and royalties.

Results of Salary and Fee System

Pittsburg, Pa.—Mayor William A. Magee has issued a statement on the question of the compensation of the delinquent tax collector. The office has been run for the last three years on a salary basis; previously the collector received a commission. From 1903 to 1906, under the commission plan, the amount of delinquencies increased from \$758,000 to \$1,020,000. During this period the taxable valuation of the real estate of Pittsburg increased from \$320,000,000 to \$409,000,000, indicating a normal increase of delinquencies. During the following three years, when the office was conducted on a salary basis, the taxable valuation increased to \$622,000,000, about 50 per cent. The delinquent taxes increased to \$3,324,000, more than three times the former increase. Hence the Mayor concludes that better results were obtained under the commission system.

SIX CITIES FOR COMMISSION GOVERNMENT

Boston Adopts Finance Commission's Charter—Two New York and Two Kansas Cities Vote for Change

Boston, Mass.—The form of city charter recommended by the old Finance Commission was adopted at the election November 2, by a majority of 3,000 on a total vote of 74,000. The principal features are: Mayor nominated by petition of not less than 5,000 voters. Elected, without party designation on ballot, for term of four years. Subject to recall after two years by not less than a majority of all voters in city; salary, \$10,000 a year; City Council, nine members, nominated by petition of not less than 5,000 voters. Term of office, three years, except for first and second years; first year, the three receiving the highest votes will be elected for three years, next three highest for two years, and next three for one year each; voters may vote for nine candidates; salary, \$1,500 a year. School Committee, nominated by petition of 5,000 voters. Party designations eliminated from official ballot at city election. Street Commission and all department heads will be appointed by the Mayor, subject to the approval of the State Civil Service Commission, but not subject to confirmation by the City Council. The next city election will be held January 11 and the new Mayor will take office February 1.

Buffalo Wants Commission Government

Buffalo, N. Y.—The proposition to ask the Legislature for a new charter on the Des Moines plan of government passed at the election November 2 by a vote of three to one.

Mt. Vernon to Ask Legislature for Commission

Mt. Vernon, N. Y.—Citizens voted, November 2, to ask Legislative sanction for a new charter providing for a Commission form of government. The proposition for the commission charter was carried by 73, out of 3,353 persons voting, and a recall provision was carried by 141. The plan provides for a commission of five members of whom the present Mayor is to be one. The entire government is to be consolidated into three bureaus. The Mayor is to be the head of the Finance Bureau, which will take over the duties of the Comptroller, Treasurer, Receiver of Taxes, Assessors and City Clerk. The Commissioner of Public Safety will have charge of the Police and Fire Departments, Board of Health and Department of Charities. The duties of the Commissioner of Public Works will include everything now under the Street and Sewer Department. The other two members will be known as Commissioners at Large. The three executive Commissioners will receive \$4,500 a year; the others, \$1,500. Commissioners are elected for five years.

Commission for Topeka

Topeka, Kan.—Topeka voted, November 2, by 497 majority, to adopt the commission form of government. The total vote was only 4,787.

Adopts Commission Government

Parsons, Kan.—At a special election, October 26, this city decided by a vote of 875 to 209 to adopt a commission form of government. The Mayor and police officials were opposed to the plan.

Taunton Adopts New Charter

Taunton, Mass.—The new charter was adopted at the election, November 2, which abolishes after December 31 the Board of Aldermen and the Common Council and transfers their power to a single Council of nine members elected at large; nominations are to be at a citizens' primary.

Will Not Alter Tax Rate

Waco, Tex.—Ignoring the requests of some of the largest taxpayers to reduce the tax levy of \$1.75 on the \$100 valuation, the Commissioners declined to alter the rate, and citizens of Waco who own property will be compelled to pay an increase of 35 cents on the rate for 1908. After the ordinance was passed fixing the levy, Mayor Baker vetoed it, but his veto was not sustained, every one of the Commissioners voting against it. Several conferences with leading taxpayers, representing some of Waco's biggest interests, resulted, but the Commissioners have refused to in any manner lower their estimate as originally made.

New Plan to Pay Debt of District of Columbia

Washington, D. C.—The Commissioners have approved a plan which they will ask Congress to enact into law to clear the District of all of its indebtedness in about twenty-five years and to provide sufficient funds to insure the completion of extraordinary projects of improvements involving an expenditure of about \$20,000,000, all without an increase of the tax rate. The plan is simply to extend the term of payment of the debt over a period of twenty-five years and extinguish it by annual payments of about \$1,000,000 for fifteen years and of \$500,000 for ten years. To provide for the extraordinary improvements it is proposed to set apart from each year's revenues \$1,000,000 plus \$100,000 for each additional year the policy is continued. The extraordinary improvements to be provided for are:

Anacostia flats	\$2,552,320	Suburban sewers	\$2,000,000
Rock creek	4,750,000	Municipal hospital	500,000
Harbor front	1,200,000	Removing crossings	400,000
High-pressure system ..	750,000	Extending water mains ..	800,000
Park development	6,000,000	New reformatory	1,000,000

Municipal Commission Studies Local Conditions

Huntington, W. Va.—The Municipal Commission, which has undertaken the task of providing a uniform code for all the cities of West Virginia, is in session here.

New York Budget Adopted

New York, N. Y.—The Board of Estimate has adopted the budget for 1910 after adding \$80,000 to the total of the tentative budget. The administrative cost of the government for next year will consequently be \$163,130,270.

STREET CLEANING AND REFUSE DISPOSAL

Squeegee Machines Called in for Winter

Baltimore, Md.—Superintendent Wickes of the Street Cleaning Department has ordered the use of squeegee machines discontinued until next spring. Then Colonel Wickes expects to have six machines at work instead of three. He finds them particularly effective on smooth pavements.

Complaints of Garbage Collection

Buffalo, N. Y.—Alderman Brooks has introduced a resolution directing the Commissioner of Public Works to submit a report to the Board showing the number and character of complaints that have been made by inspectors and citizens against the manner in which garbage has been and is being collected under the present contract. "I have received numerous complaints from persons in my ward," said Alderman Brooks, "against the method of collecting garbage, and I intend to see that the Buffalo Fertilizer Co. lives up to its contract or have the same cancelled. There is no reason why the men employed to cart out garbage barrels should be allowed to walk over lawns and scatter the garbage all over a person's property. Furthermore, in some sections garbage barrels are carted out of yards and permitted to stand for hours before the wagons come along. The stench from these receptacles is obnoxious and the practice is injurious to the public health."

New Crematory Is Given Trial

Sacramento, Cal.—The forty-ton unit to the city garbage crematory has been started and the first day's run was entirely successful. While the new furnace was in operation it was visited by City Engineer Randle, Superintendent of Streets Elliott and Trustees Carragher and Rider. All were pleased with it. The new furnace is quite an improvement over the old one and will be less expensive for the city to run. It is equipped with a forced draft and the air that goes through the grates is preheated. The old furnace depends upon a 175-foot stack for its draft.

New Sweeper Is Efficient

Pasadena, Cal.—Pasadena's new street sweeper has been tested. It is to replace the old steam engine suction sweeper which had been in use in the past, and while it is considerably more expensive in the first place, it costs much less to operate. It contains a gasoline engine to run the suction fan and is far lighter than the old machine. In use one night, according to Chief Inspector L. C. Jones, the new sweeper gathered up twice the dirt from the streets that the old one did. One man operates it instead of two, and two horses draw it instead of four.

Conservation of City Waste

Hartford, Conn.—At a meeting of the Park Commissioners, Superintendent George A. Parker brought up the matter of using the city's waste products and thus saving the city considerable expense in the course of a year. Mr. Parker said that the Park Board had a great deal of use for some of the products, such as the ash collections, which could be used for filling in places in the various parks, and the street sweepings, which would be of great value for fertilizer. The surplus dirt from the ditches of the Water Board and the manure from the Fire Department would also be of great value for fertilizer. In return the Park Board could exchange different articles, such as turf, which it has, and which other boards are obliged to purchase. Mr. Parker was not certain that any such mutual benefit arrangement could be made with the different boards. It was the opinion of the Board that the Superintendent should investigate the matter to determine just what can be done and what the present disposal of the waste products is.

RAPID TRANSIT

Aberdeen Grants Street Car Franchise

Aberdeen, S. D.—A franchise has been granted the Aberdeen Railway Company by which the latter agrees to build four miles of road by December 1, 1910. The franchise is for twenty years for any power except steam upon any street designated by the Public Service Committee and at least hourly service must be maintained from 6 a. m. to 11 p. m. at a 5-cent fare. Interurban lines must be allowed to use the tracks upon terms of payment to be decided upon by arbitration.

Want Elevated Removed

Boston, Mass.—The Railroad and Transit Commissioners, sitting as a joint board, gave a hearing on the bill presented to the last Legislature providing for the removal of the elevated structure in Washington street, between Oak street and Dudley street, and for the substitution therefor of a subway beneath Washington street. Daniel J. Cronin, as attorney for the parties petitioning, said he would offer evidence to prove to the Commission that the operation of the present elevated structure is a public nuisance, which should be abated by the removal of the structure, and he argued that this may be done irrespective of any agreement which the Elevated Company may have with the Commonwealth. The structure in Washington street, immediately upon its being placed in operation, caused a horizontal cut in property values on Washington and contiguous streets; drove retail dealers out of business and resulted in many cases in taking their mortgaged property away from people of small means, and in most cases the amount received as damages has been insufficient to cover the loss in rentals. He said the probable cost of a subway beneath Washington street in place of the present elevated structure has been estimated by competent engineers at \$2,500,000, exclusive of stations, and it is proposed that one-half of this be borne by the city and the remainder by the owners of abutting property.

Kansas City to Get "Six for a Quarter"

Kansas City, Mo.—The ordinance providing for extending the Metropolitan Street Railway's franchise to 1951 has been passed by the lower house of the City Council and signed by the Mayor. It will be voted on by the people on December 16. The ordinance provides that after 1913 tickets will be sold at six for a quarter or 25 for a dollar. Provision is made for the purchase of the lines by the city after 1945 if it desires.

Women Win Fight for Smokeless Street Cars

Los Angeles, Cal.—After a fight lasting seven months, the women of Los Angeles have won their fight against smoking on street cars in this city. By a vote of six to three, the City Council passed an ordinance prohibiting smoking on street cars, except on rear platforms or rear open sections. The victory is but partial, but those who have been leaders in the movement say that they hope to secure a new ordinance prohibiting smoking on cars altogether.

Near Side Stop for Cars Opposed

Minneapolis, Minn.—Agitation by automobilists to compel street cars to stop on the "near," instead of the "far," side of the street doesn't get near or far with street railway officials. "For one thing, the city ordinances would have to be changed," says W. J. Hield, vice-president and general manager of the Twin City Railroad Traction Company. "And besides the great number of unpaved streets with crossings that are often muddy makes it out of the question as an improvement. Stop the car on the near side and the exit would be the car's length from the crossing. Added to that is established custom of years' standing, running back to horse car days. No, it wouldn't be an improvement."

Money for Fourth Avenue Subway

New York, N. Y.—The Board of Estimate approved unanimously the action of the Public Service Commission in awarding contracts for the construction of the Fourth avenue subway in Brooklyn. An appropriation of \$2,850,000 was made for the beginning of the work. This was all that the Public Service Board asked for to start work on the first six sections, but in order that there shall be no danger of the new Board of Estimate holding up the work another resolution was passed requesting the Public Service Commission to apply for an appropriation of \$13,036,381 more, which, it is estimated, it will cost to finish the six sections.

MISCELLANEOUS

Ordinances Prohibit Fireworks

Columbus, O.—Without a dissenting vote the City Council passed two fireworks ordinances preventing any pyrotechnic displays or the explosion of any kind of fireworks at any time in the city limits, except by written permission from the Mayor, and also making it unlawful to keep, store or offer for sale such explosives.

Postmaster Says Street Signs Are Necessary

Fort Worth, Tex.—In line with his declaration some time ago to the effect he would not put on more carriers in Fort Worth until the requirements of the Postoffice Department had been met by street signs being placed on street crossings, Postmaster Lon M. Barkley has refused to put on two additional carriers, which are needed on account of increased mail in certain districts. Mr. Barkley states he has given the City Commission due notice relative to the matter and will carry out the instructions issued from Washington to furnish no carrier service where there are no street signs.

Regulating Buildings Along Boulevard

Indianapolis, Ind.—The Board of Park Commissioners will take up the question of building restrictions for houses to be erected on property abutting on the proposed new boulevards. Under the law the Board has the right to establish a line determining the distance at which all structures to be erected on property fronting any park or boulevard may be built and may acquire by condemnation the right to prevent the erection of and the removal of all structures outside of such lines. The attention of the Board has been called to the fact that the erection of a double house placed on the property line is contemplated near Northwestern avenue, abutting on the boulevard recently completed. Building Inspector Winterrowd said he would refuse to issue a building permit for the house until the Park Board had formulated its rules.

Filtration Plant No Place for Billboards

Waterbury, N. Y.—City Engineer R. A. Cairns has placed himself on record as being strenuously opposed to landscape advertising, when, at the meeting of the Board of Public Works, he reported unfavorably on the proposal of a piano house to give the city 12 piano boxes in return for the privilege of placing six boxes for advertising purposes on the filter embankment. Mr. Cairns stated in his report that he did not believe that the filter embankment should be turned into a public billboard.

To Fine Autoists By Traffic Rule

Trenton, N. J.—Charles G. Teunon, Trenton, N. J., was fined \$10 in Central Police Court for leaving his automobile facing in the wrong direction in the street, and Justice Harris took occasion to announce that automobiles would be subject to the new traffic regulations the same as teams and would be required to face at all times with the direction of travel. Later Police Captain Cleary asserted that a campaign would be waged against automobilists who leave their cars in the street for hours at a time. He added that the streets must not be used as garages. Patrolmen have been instructed to enforce the traffic regulations against automobilists and to make arrests in all cases of violation. If they cannot find the automobilists they are to take the automobiles—if they can do so. Expressmen about the city, who have long been the target of police action for allowing their teams to stand in the streets, are jubilant over the prospect of seeing automobilists treated in the same way.

Keep-to-Right Ordinance Being Enforced

Augusta, Ga.—The "drive-to-the-right" ordinance is causing all sorts of trouble to owners of vehicles and to visitors. For some weeks notices have been posted at all corners giving warning of the requirements of the new law, but they have passed unheeded. So the police have been instructed to arrest all who violate it. As a result every morning a big number faces the Recorder with excuses of various kinds. The court has been lenient thus far, imposing only light fines, but the trouble is increasing instead of lessening.

Zoological Garden for Lawton

Lawton, Okla.—On suggestion of members of the Fire Department, where a large collection of animals has been made by Chief Sim Sheppard, a well-defined movement for the establishment of a zoological garden of animals found in the vicinity and in the Wichita Mountains has been started, and it is probable that at the next meeting of the Chamber of Commerce definite action will be taken toward looking after a development of the scheme.

Wants Artistic Street Signs

Hartford, Conn.—The Street Board has instructed the Superintendent of Streets to co-operate with the Municipal Art Society in placing new street signs on Asylum street, between Main street and Union Place. It was decided a while ago to give the signs a trial, providing the Municipal Art Society would buy them. The society has done so. The signs have white letters on a blue ground, and give the name of the street, and also the first and last street numbers in the block.

May Dredge the Charles

Newton, Mass.—Mayor Hutchinson, City Engineer E. H. Rogers and Street Commissioners Charles W. Ross of Newton, Mayor Walker of Waltham, Selectman George A. Sweetser, Hiram B. Meyers and Joseph E. Selfe of Wellesley and the officials of Weston are to join in investigating conditions existing in Charles River, which, it is expected, will lead to the permanent improvement of the stream. The river will be inspected from Newton Upper Falls to the Moody street bridge in Waltham to determine where there may be unhealthful growths as a result of the low water during the past summer. By the investigation it will be determined whether the sanitary conditions of the river may be improved by dredging the bed. If such work is found to be advisable the Metropolitan Park Commission will be asked to assist in the dredging.

Spokane to Work Hoboes

Spokane, Wash.—The City Council has determined to establish a workhouse where brooms, baskets and kindred things may be made, and also a rock crusher, the output of which will be given free to farmers to improve their roads. Scores of "hoboes," out of work, commit minor offenses each month and are sent to the city jail, where they have warm lodgings and free board. These men, the authorities have determined, will have to work to pay for their keep.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

Reasonableness of Water Rates

Twitchell et al. vs. City of Spokane et al.—Under Pierce's Code, empowering cities to own water works with power to regulate the use of the water and price thereof, and Spokane City Charter, to the same effect, while the city cannot charge more than a reasonable water rate, it may make a rate which will yield a reasonable profit. Water rates are not taxes, and are nothing more than the price paid for water as a commodity. A city owning its own water works may furnish water for city and charitable purposes free. The cost of extending water mains and depreciation are properly considered in fixing the rates charged by a city to consumers of water, but, even if not, it would only be a circumstance tending to show that the rate was excessive, and not necessarily conclusive. Some reasonable discretion must abide in the officers whose duty it is to fix the rates charged by a city for water, and, unless the court can say that the rate fixed is excessive, it must stand.—Supreme Court of Washington, 102 P. R., 150.

Intoxicating Liquors—Regulating Place of Sale

City of Delphi vs. Hamling.—Acts 1905 empower a city to enact ordinances to license and regulate all places where intoxicating liquors are sold, to designate the room or building where such liquors may be sold, and to direct the arrangement of the doors, windows and openings of the particular room where sales may be made, and the arrangement of the bar and the interior arrangement of such room. Held, to authorize an ordinance requiring any room where intoxicating liquors are sold to be a single room, without rear or side doors, inside stairway leading to upper rooms, etc., and to be arranged as to its front and the interior arrangement, so that it may be viewed throughout its entire extent at all hours when liquors may be sold by any person looking through the front windows and glass doors of such room from the street, and further requiring any screens, blinds, etc., obstructing such view, to be removed during such hours.—Supreme Court of Indiana, 89 N. E. R., 308.

Improvement Bond Pledging Credit of City

Town of Windfall City et al. vs. First National Bank of New Castle.—A stipulation in city improvement bonds pledging the credit of the town was ultra vires, and unauthorized by Act of March 8, 1899, and acts amendatory thereto, under which the bonds were issued, and did not bind the town to pay any portion of the cost of the improvement out of its general fund to make up a deficit resulting from a failure to collect assessments against property not subject thereto.—Supreme Court of Indiana, 89 N. E. R., 311.

Compensation of Village Attorney

McGovney vs. Village of Melrose Park.—Under a village ordinance fixing at a specified amount the annual compensation of the Village Attorney, and providing that in certain cases such attorney shall be allowed the usual fees of attorneys practicing in such courts besides the amount fixed as his salary, the attorney cannot recover for services during the year of his appointment a sum in excess of the amount so fixed, in the absence of any record showing a special employment by the village board in one or more of the cases mentioned.—Supreme Court of Illinois, 89 N. E. R., 264.

Defective Streets—Liability

Forsyth vs. City of Saginaw.—Saginaw City Charter, Local Acts 1905, providing that no action shall be maintained against the city for injuries from defective streets, unless written notice of the defect was given to the Board of Public Works, and there was a neglect, within a reasonable time thereafter, to remove the defect, applies to all cases of civil action arising under Compiled Laws 1897, making a city liable for negligently failing to keep its streets in repair, and limits the liability of the city under the general law, and the fact that the city had knowledge of a defect does not excuse the failure to give the written notice.—Supreme Court of Michigan, 122 N. W. R., 523.

Regulating Junk Shops

Commonwealth vs. Maletsky.—Chelsea City Ordinances provide that no person shall use any building for picking, sorting or storage of rags without a permit from the Chief of the Fire Department, and imposes a fine of not less than \$20 nor more than \$100. Held, that it could not be sustained under Revised Laws 1902, giving towns power to make such orders or by-laws, not repugnant to law, as they may judge most conducive to their welfare for directing their prudential affairs, preserving peace and good order and maintaining their internal police, etc., and may, except as thereafter provided, affix penalties for breaches thereof not exceeding \$20 for one offense. The ordinance cannot be sustained under the authority given by the Statutes of 1902 to cities and towns to regulate and license junk collectors, since that statute limits the penalty for violation of the license given thereunder to \$20 for each offense. Municipal authorities may pass ordinances regulating the materials and construction of buildings used for the business of picking, sorting, or storing rags, and the mode of their use, and providing for their inspection. That one effect of such regulation would be to exclude some individuals from that occupation, or prevent them from using their property in an advantageous manner which otherwise would not be unlawful, would not make the regulations invalid. Where an unlimited power has been granted by the Legislature to certain designated municipal officers, an ordinance by which such officers undertake to delegate the power absolutely to a subordinate officer is void. The power of a municipal corporation to regulate the inspection, materials, construction, and use of buildings within its limits is not a power which it can exercise independently of legislative authority, and the authority given cannot be transcended. The Legislature may establish regulations relating to the inspection, materials, construction, and use of buildings, and may delegate the power to city governments or other boards, and make licenses or permits from an administrative officer necessary to the exercise of trades or kinds of business that might involve a public danger. Revised Laws of 1902, providing that every city except, etc., which accepts the act, may, for the prevention of fire and preservation of life, by ordinances regulate the inspection, materials, construction, alteration, and use of buildings within its limits, with certain exceptions, does not authorize Chelsea City Ordinances, providing that no person shall occupy, use or maintain any building for picking, sorting or storage of rags without a permit from the Chief of the Fire Department; the powers delegated to the Fire Chief being legislative, and as such resting in the discretion of the municipal body entrusted with them, which body cannot delegate their exercise to others. In the absence of a clear expression of the legislative will, an ordinance which attempts to vest in a City Council, or a Board of Control, or some administrative officer of the municipality, the power, not subject to review by the courts, or by other higher authority, to permit or refuse to permit the carrying on of a business lawful in itself and not prohibited by legislation, is invalid.—Supreme Judicial Court of Massachusetts, 89 N. E. R., 245.

Bond Election—Water Works and Sewerage

Johnson et al., Commissioners of Public Works, vs. Roddey, Mayor, et al.—Civil Code, empowering a municipality to contract for plants, either for water works or sewerage, or lighting, one or both, and to issue bonds to pay therefor, provided they shall be authorized by a majority vote of the electors, requires an opportunity to vote separately upon the issuance of bonds for either a water works or sewerage or lighting plant, and an election not submitting separately the questions of issuing bonds for a water works and for a sewerage system is void.—Supreme Court of South Carolina, 65 S. E. R., 626.

Sewer Contract—Authority of Engineer

McCaleb vs. Dreyfus.—Where the nature of a public improvement permits a predetermination of its actual cost, it should be determined by the City Council, but a provision in sewer specifications that if, in the judgment of the City Engineer, it shall be necessary to form any part of the foundation of the sewer of concrete, it shall be paid for as extra work, was not void as giving the City Engineer discretionary power to vary the cost of the work.—Supreme Court of California, 103 P. R., 924.

NEWS OF THE SOCIETIES

Ohio Police Chiefs' Association.

The association will support before the Legislature a number of bills affecting police departments. Among these will be bills to take police departments out of the hands of the Mayors and have them directly responsible to the Governor, to establish a State Bureau of Criminal Identification at Columbus, to make kidnapping a life imprisonment crime, and to reduce the amount to be stolen to constitute the crime of grand larceny from \$35 to \$30. Detective Jake Mintz has received notice of his appointment on the Legislative Committee to push the above and other bills. Perry D. Knight, Chief of the Toledo Police, is chairman of the Legislative Committee.

American Roadmakers' Association.

The following were chosen as representatives to the International Good Roads Congress, to be held in Brussels next year, by President James A. MacDonald: Vice-President Samuel Hill, of Seattle; Secretary E. L. Powers, of New York, and A. C. Campbell, a Canadian engineer of vast experience. The following officers of the association were elected at the close of the Columbus convention: James H. MacDonald, State Highway Commissioner of Connecticut, president; Samuel Hill, Seattle, Wash., vice-president; E. L. Powers, New York, secretary; Joseph W. Hunter, State Highway Commissioner of Pennsylvania, treasurer.

American Electrochemical Society.

The sixteenth general meeting of the society was held in New York, N. Y., at the Chemists' Club October 28-30. Among the papers presented were the following: "The Titanium Arc," by W. S. Weedon, Wilmington, Del., and "A New Theory for Corrosion," by Maximilian Toch, New York, N. Y.

Bridgeton, N. J., Commercial League

—At a meeting October 25 Clyde Potts, New York, N. Y., sanitary engineer, made an address on the problem of sewage disposal.

American Chemical Society, Pittsburgh Section.—At a meeting at the Carnegie Technical Schools October 28 a paper was read by E. C. Trax, chemist and bacteriologist, on "The Softening and Filtration of the McKeesport Water Supply." "Filtration of the Pittsburgh Water Supply" was the title of a paper by W. N. C. Baton, chemist and bacteriologist.

East Tennessee Good Roads Association.—The annual session was held at Morristown, Tenn., November 9. One of the important objects of the convention was to promote the construction of a great automobile highway extending from Birmingham, Ala., to Bristol, taking its course through East Tennessee. H. S. Brown, Greenville, Tenn., is president, and George H. Freeman, Knoxville, Tenn., secretary.

American Society of Mechanical Engineers.—Nominations of officers for the coming year are given in the list prepared by the nominating committee as follows: For president, George Westinghouse, Pittsburgh, Pa.; for vice-presidents, Charles Whiting Baker, New York City; W. F. M. Goss, Urbana, Ill.; E. D. Meier, New York City; for managers, J. Sellers Bancroft, Philadelphia, Pa.; James Hartness, Springfield, Vt., and H. G. Reist, Schenectady, N. Y.; for treasurer, Wm. H. Wiley, New York City.

Civic League of St. Louis, Mo.—The Civic League of St. Louis has arranged for a series of luncheons and discussions to be held on Saturday afternoons at the Planters Hotel. A speaker from out of town will be invited to address the League at each meeting. At the first luncheon, November 6, Henry Bruere, Director Bureau of Municipal Research, spoke on "Reform in Municipal Accounting." On November 13, Elliot H. Goodwin, Secretary National Civil Service Reform League, will speak on the "Merit System in City Government." On Saturday, December 4, D. J. Haff, Attorney for Park Board, Kansas City, will speak on the "Legal Side of a Park System." W. L. R. Gifford is chairman of the municipal discussions committee.

Calendar of Meetings

November 9-11.

American Society of Municipal Improvements.—Annual convention, Little Rock, Ark.—A. Prescott Folwell, Secretary, 241 W. 39th St., New York, N. Y.

November 15-18.

American Civic Association.—Fifth annual convention, Cincinnati, Ohio.

November 15-18.

National Municipal League.—Annual meeting, Cincinnati, O.—Clinton Rogers Woodruff, Secretary, 705 North American Building, Philadelphia, Pa.

December 3-4.

New Jersey Sanitary Association.—Annual meeting, Lakewood, N. J.—J. A. Exton, Secretary, 75 Beach st., Arlington, N. J.

December 7-10.

American Society of Mechanical Engineers.—Annual meeting, New York, N. Y.—C. M. Rice, Secretary, 29 W. 39th st., New York, N. Y.

December 14-15.

Association of American Portland Cement Manufacturers.—Annual meeting, New York, N. Y.—Percy H. Wilson, Secretary, Land Title Building, Philadelphia, Pa.

PERSONALS

BRANSFORD, JOHN S., Mayor of Salt Lake City, Utah, has been re-elected over Fallon and Murdock.

GALVIN, JOHN, Cincinnati, O., Mayor, has been elected Vice-Mayor and President of Council over Albert Mulhauser.

GAYNOR, WILLIAM J., Justice of the Supreme Court of New York has been elected Mayor of New York City over Otto T. Bannard and William R. Hearst: W. A. Prendergast has been elected Comptroller, John Purroy Mitchel, President of the Board of Aldermen; George McAneny, President of the Borough of Manhattan; Alfred E. Steers, President of the Borough of Brooklyn; Cyrus C. Miller, President of the Borough of The Bronx, Lawrence Gresser, President of the Borough of Queens, and George Cromwell, President of the Borough of Richmond, the last two being re-elected.

LEE, HENRY, Mayor of Bridgeport, Conn., has been defeated for re-election by Edward G. Buckingham, City Clerk for the past eight years, who is but 35 years of age.

MCCARTHY, P. H., San Francisco, Cal., has been elected Mayor over William Crocker and Dr. T. B. Liland, while Francis J. Heney, the graft prosecutor, was defeated for District-Attorney by James Fickert.

New Jersey cities have elected the following Chief Executives, those with a * being re-elected Mayor:

Allendale—Walter Dewsnap.
Asbury Park—*T. Frank Appleby.
Avon—John Thompson.
Bayonne—John J. Cain over Garet L. Post.

Belvidere—Thomas H. Hayes over Dr. E. C. Lockard.
Bogota—W. N. Smith.
Boonton—*Cornelius J. Kopp.
Bordentown—Charles W. Kunz over Mayor Isaac D. Gobel.
Bound Brook—John T. Robinson.
Branchville—John H. Nelden.
Bridgeton—George Hampton over R. C. Ward.
Burlington—Charles P. Farmer over Charles M. Lanning.
Cape May City—*Frederick J. Melvin.
Carlstadt—August Gerecke.
Chatham—Frank L. Kelly over George S. McDougall.
Clayton—J. Preston Potter over Mayor F. R. Nichols, who served 11 years.
Cliffside Park—S. Wood McClave.
Collingswood—Alfred K. Roberts.
Deal—*William Levy over Charles Day Bernheimer.
Dover—John Mulligan over Mayor George Pierson.
Dunellen—W. A. Sandford over Chas. F. Starker.
East Newark—Cornelius A. McGlennon.
Elmer—Elias T. Vandergrift over Mayor Jacob R. Edwards.
East Rutherford—George A. Duncan.
Edgewater—John Calahan.
Englewood—James A. C. Johnson over William Dulles.
Englewood Cliffs—W. Allison.
Essex Falls—Walter P. Paret.
Fairview—Theodore Vogt.
Frenchtown—William P. Loper.
Garfield—John Karl.
Glen Ridge—Giles W. Mead.
Guttenberg—*Charles A. Eyppey.
Hackettstown—Dr. Frank H. Cook over James Tamblin.
Hammonton—John M. Austin over Michael K. Boyer.
Hasbrouck Heights—A. G. Austin.
Helmetta—Charles M. Bumstead.
Highland Park—Lorenz Volkert.
Hoboken—George Gonzales over Lawrence Fagan.
Hopewell—*Dr. Theodore A. Pierson.
Jamesburg—A. E. Chamberlain.
Jersey City—*H. Otto Wittmann over former Mayor Mark M. Fagan.
Kearny—*Louis M. Brock over William Greenfield, Jr.
Lambertville—William J. Ledger over Samuel E. Morse.
Madison—Dr. Calvin Anderson.
Maywood—John R. Davies.
Milltown—Conrad Richter.
Morristown—*Theodore Ayers over John N. Conkling.
National Park, Henry C. Fettes over Rev. James E. Lake.
Netcong—*Abram J. Drake.
New Brunswick—John J. Morrison.
North Arlington—William Brandenburg over William Kingsland.
North Plainfield—*Newton B. Smalley over William Lunger.
Ocean City—Lewis M. Cresse, without opposition.
Park Ridge—Frank O. Mittag.
Passaic—Gen. Bird W. Spencer.
Paterson—*Dr. Andrew D. McBride.
Paulsboro—*William J. Adomson over Ezekiel English by one vote.
Pennington—Elmer D. Wagner.
Pennsgrove—*Frederick A. Gentien.
Pitman—*J. M. McGowan.
Pleasantville—Thomas Crawford.
Pompton Lake—Henry G. Hirschfeld.
Princeton—*Harvey L. Robinson over Robert R. Whitney.
Rahway—William Howard.
Red Bank—*Charles H. Root.
Riverside—Joseph A. Brohel.
Riverton—Edward H. Flagg, Jr.
Rockaway—Harry W. Mutchler.
Roselle—*Charles W. MacQuoid.
Rumson—John Yeomans.
Rutherford—David Bosman over Oscar Gung.
Seabright—James H. Johnson.
Sea Isle City—Louis Steinmeyer, without opposition.
Secaucus—*Romeo T. Churchill.
Somerville—*Charles C. Kenyon.
South Amboy—Thomas J. Scully.
South River—*Joseph Mack over Nathan W. Clayton.
Spring Lake—*Oliver H. Brown.
Stanhope—H. H. Neldon.
Summit—George R. Vreeland.
Sussex—Samuel S. Van Druff.
Swedesboro—Wilmer Eggee.
Tenafly—William Eager.
Trenton—*Dr. Walter Madden over Dr. Thomas H. Mackenzie.
Verona—Rev. John R. Pratt.
Washington—*C. B. Smith for fifth term without opposition.
West Hoboken—Charles A. Mohn over Richard J. Lynch.
West New York—*Richard J. Miller over Ord Darling.
Woodbridge—John C. Klock.
Woodstown—Enoch S. Fogg over Edward R. Waddington.

New York cities elected the following Mayors last week:

Albany—James B. McEwan over George C. Hisgen.
 Amsterdam—Seely Conover.
 Auburn—Thomas H. O'Neill over Mayor Augustus C. Hoenig.
 Binghamton—John J. Irving over Mayor Clarence M. Slawson.
 Buffalo—Louis P. Fuhrmann over Jacob J. Siegrist.
 Cohoes—M. D. Hanson, by seven votes over James H. Shine.
 Corning—Frederick A. Ellison.
 Dunkirk—Harry James.
 Elmira—Daniel Sheehan.
 Fulton—Joseph Connors.
 Geneva—Patrick O'Malley over Charles W. Fairfax.
 Gloversville—Wesley M. Borst over Arthur R. White.
 Hornell—Frank J. Nelson over Mayor R. M. Prangen.
 Johnstown—Abram Harrison over Lucius L. Struber and James Hoagle.
 Kingston—Roscoe E. Irwin over Mayor Walter P. Crane.
 Little Falls—Timothy Sasey over Ellis. Mount Vernon—Edwin W. Fiske, re-elected for fifth term, over Frederick W. Clark and John H. Cordes.
 Newburgh—Benjamin McClung over E. M. Neurthfeldt.
 New Rochelle—Harry E. Colwell over Dr. Frederick H. Waldorf.
 Olean—P. C. Foley.
 Oneida—Dr. Otto Pfaff over Mayor Clark Frost.
 Oswego—John Fitzgibbons over Chauncey C. Place.
 Port Jervis—Dr. Charles N. Knapp.
 Rochester—Hiram H. Edgerton over Nelson E. Spencer.
 Rome—Albert R. Kessinger.
 Schenectady—Dr. Charles C. Duryee over Everett Smith.
 Syracuse—Edward Schoenick over George W. Driscoll, J. Brewster Gore and Joseph A. Griffin.
 Tonawanda—Charles Zuchmaier over Zimmerman.
 Troy—Elias P. Mann over W. T. Shyne.
 Utica—Frederick Gillmore over Mayor Thomas Wheeler.
 Watertown—Francis M. Hugo.
 Yonkers—Charles L. Warren over James T. Lennon.

Kentucky cities have elected the following Mayors:

Bowling Green—Dr. Townsend.
 Carlisle—John H. Frey.
 Carrollton—James Gayle.
 Elkhart—E. B. Weathers, Sr.
 Eminence—Geo. W. Young.
 Frankfort—James Polsgrove.
 Franklin—D. H. Hatter over Dr. W. H. Arnold.
 Glasgow—P. P. Dickinson.
 Henderson—Dr. W. I. Thompson over N. P. Taylor, Dr. Cyrus Graham and G. H. Delvin.
 Lebanon—C. C. Spalding.
 Louisville—W. O. Head over Mayor J. F. Grinstead.
 Maysville—J. W. Lee.
 Owensboro—Dr. Lambert over A. J. Williams.
 Richmond—Samuel Rice.

Ohio cities have elected the following Mayors, those with a * being re-elections:

Akron—William T. Sawyer.
 Alliance—E. P. Speldel over Mayor John L. McConnell.
 Ashland—E. S. Minameyer over A. S. Houseman.
 Ashtabula—H. D. Cook over Dr. J. H. Pardee.
 Athens—C. W. Vaughten.
 Barberton—William S. Mitchell.
 Bellefontaine—L. E. Pettitt over J. W. Bergshicker.
 Bowling Green—I. N. Taylor over Mayor Thos. F. Conley.
 Bryan—J. B. White.
 Bucyrus—E. J. Songer.
 Cadiz—W. S. Gessna.
 Cambridge—R. M. Allison.
 Canton—Arthur R. Turnbull over Charles R. Dougherty.
 Celina—P. E. Kenney.
 Chillicothe—Wallace D. Yapple, fifth term.
 Cincinnati—Dr. Louis Schwab over John Weld Peck.
 Circleville—Chas. G. Duffy.
 Cleveland—H. C. Baehr over Mayor Tom L. Johnson.
 Clyde—Winfield Adare over James E. Stark.
 Columbus—George S. Marshall over Frank R. Vance.
 Coshocton—G. W. Cassingham over Mayor Gail S. Hamilton.
 Dayton—Edward E. Burkhart over Ezra M. Kuhns.
 Defiance—C. E. Chenevert.

Delaware—W. E. Haas.
 Delphos—J. K. Williams over Dr. M. M. Hixson.
 Delta—Dr. W. A. Wilkins over Mayor N. E. Booles.
 East Liverpool—Samuel W. Crawford over Andrew Roe and V. R. Schriber.
 East Youngstown—E. C. Hamilton over Frank Heman.
 Eaton—D. J. Miller over Capt. G. H. Kelly.
 Elyria—Thomas A. Conway over Mayor David S. Troel.
 Findlay—E. Lincoln Groves over Mayor James B. Walker.
 Franklin—Charles Munger.
 Fremont—C. C. Tunnington.
 Gallon—H. H. Hartman.
 Gallipolis—Charles W. Kerr over J. A. Lawson.
 Garrettsville—J. W. Root.
 Genoa—Philip Manners over Mayor C. A. Powers.
 Greenville—G. Schermund.
 Hamilton—A. Rothwell.
 Hillsboro—H. Nesbit.
 Hubbard—John J. Boyle over Mayor William Dalbey, Jr.
 Ironton—Charles W. Golden over Thomas J. Kennedy.
 Jackson—John Clark.
 Kent—H. A. Minich over O. S. Rockwell.
 Kenton—M. M. Thompson over H. D. Lease.
 Lancaster—C. H. Saxauer over J. H. Littrell.
 Lebanon—Albert Stubbs.
 Lima—George Dyer over Mayor Fred C. Becker.
 Lisbon—John Hinchcliffe over Benjamin F. Hennacy.
 Logan—D. B. Thurness.
 London—H. M. Chaney.
 Lorain—Former Mayor F. J. King over Mayor A. A. King.
 Lowellville—Dr. Robert Erskine.
 McConnellsville—McGonagel.
 Mt. Gilead—William Kauffman.
 Mt. Vernon—C. A. Mitchell.
 Mansfield—Huntington Brown over W. O'Donnell.
 Marietta—Charles F. Leeper.
 Marion—J. G. Seiter.
 Martin's Ferry—H. Long over Frank Heinrich.
 Marysville—John T. Cartmell.
 Massillon—Charles L. Frantz.
 Maumee—John Smith over Mayor H. B. McGovern.
 Medina—George A. Richards over J. L. Dealing.
 Miamisburg—William Jansen over A. L. Stocker.
 Mingo Junction—Frank F. Lisle.
 Middletown—L. C. Heffner over Mayor F. G. Simpson.
 Napoleon—J. V. Mullen over F. M. Grant.
 Newark—Herbert Atherton.
 New Lexington—R. Gue.
 New Philadelphia—J. M. Schell over R. G. Galbraith.
 Niles—John S. Naylor over Kearney.
 Norwalk—C. P. Venus over J. M. Chaffee.
 Norwood—Orville Frank Dwyer over Wm. M. Fridman.
 Ottawa—T. F. McElroy.
 Oxford—A. F. Sloane over Mayor Thos. L. King.
 Painesville—J. B. Burrows over Mayor Harry T. Nolan.
 Piqua—Charles Kiser over Mayor J. Clare Hughes.
 Plain City—E. H. Bechtel.
 Port Clinton—George Pledge over Mayor Rolla Smith.
 Portsmouth—H. C. Searcy.
 Ravenna—C. J. Hubbell.
 Richwood—D. E. Ogan over Mayor Charles Norris.
 St. Clairsville—Henry M. Davis over George Arnold.
 Salem—Al Carlile.
 Sandusky—G. T. Lehrer over Mayor John J. Molter.
 Sebring—R. S. Jones.
 Sidney—William M. Crozier.
 Somerville—Ben W. Baker.
 Springfield—Charles J. Bowlus over Samuel J. Lafferty.
 Steubenville—Thomas W. Porter over George Hutton.
 Tiffin—Jos. C. Arnold over Elmer L. Volkmer.
 Toledo—Brand Whitlock for third term.
 Troy—John McClain over Thomas Kyle.
 Urbana—W. R. Wilson over Mayor E. L. Bodey.
 Van Wert—B. C. Conn.
 Wapakoneta—T. J. Cartmell.
 Warren—Z. F. Craver over Mayor W. B. Kilpatrick.
 Washington Court House—R. G. Allen over P. H. Curtin.
 Waverly—David Lorbach.
 Wellston—George Pugh.
 Wellsville—Edwin McKenzie over Howard Weaver.
 Wooster—W. E. Freeman.
 Xenia—William Dodds.

Youngstown—A. W. Craver over Paul J. Jones.
 Zalesville—A. H. Gorrell over H. Achauer.

Indiana cities last week elected the following Chief Executives, those with a * being re-elected:

Alexandria—James H. Edwards.
 Anderson—F. P. Foster over Dr. Stanley, C. Newlin and Fred L. Struckland.
 Angola—Thomas Owens.
 Attica—W. B. Reed.
 Auburn—Hugh R. Culbertson and J. E. Ensley, tie vote.
 Aurora—Willard B. Stier.
 Batesville—George M. Hillenbrand.
 Bedford—A. J. Fields over J. B. Stipp.
 Bloomington—J. J. Harris over A. L. Donaldson.
 Bluffton—Frank Smith.
 Booneville—T. D. Scales.
 Brazil—John Bray over W. C. Hall.
 Butler—Walter Mondhank.
 Cannelton—Oscar Denny.
 Columbia—Benton J. Bloom.
 Columbus—Charles S. Barnaby over Patrick F. McCormack.
 Covington—T. H. McGeorge.
 Connersville—Finley H. Gray.
 Crawfordsville—Capt. M. V. Wert over William C. Murphy.
 Decatur—Judson W. Teeple.
 Delphi—Dr. F. H. Robinson.
 East Chicago—Dr. A. G. Schlicker over P. Whelinski and J. S. Spellacy.
 Elkhart—Ellis M. Chester.
 Elwood—Austin Brumbaugh.
 Evansville—Charles F. Hellman over Mayor J. J. Nolan.
 Frankfort—Dr. O. W. Edmonds.
 Franklin—Will G. Oliver.
 Ft. Wayne—Jesse Grice over A. M. Schmidt.
 Gary—Thomas F. Knotts.
 Gas City—B. J. Sullivan.
 Goshen—Samuel F. Spohn.
 Greenfield—Ora Meyers over Mayor John B. Hinchman.
 Greensburg—James E. Mendeall.
 Hammond—Lawrence Becker over F. R. Schaaf.
 Hartford City—Dr. E. W. Sweigert over Benjamin Chessman.
 Huntington—Milo Feichter.
 Indianapolis—Samuel Lewis Shank over Charles A. Gauss.
 Jeffersonville—James E. Burke.
 Kendallville—Forrest Field.
 Kokoma—Rev. John L. Puckritt over Judge R. N. Cooper.
 Lafayette—George R. Durgan over Henry Oversch.
 Laporte—Lemuel Darrow, for fifth term, over Julius C. Travis.
 Lawrenceburg—Joseph Leonard Axby.
 Lebanon—Elza O. Rogers over Mayor John H. Hoy.
 Ligonier—W. H. Wigton.
 Linton—John Pennington.
 Logansport—David D. Finkle.
 Loogootee—Phillip McGovern.
 Madison—George E. Harper over Mayor John M. Cisco, who served six years.
 Martinsville—Clinton H. Hastings.
 Marion—John O. Wilson over Marcus M. Kilgore.
 Michigan City—Fred C. Miller over Oscar L. Niemey.
 Mishawaka—John A. Herzog over Fred Eberhart.
 Mt. Vernon—John H. Moeller.
 Montpelier—I. G. Burris.
 Muncie—Edward M. Tuhey.
 New Albany—Newton A. Greene over Charles W. Inman.
 Noblesville—E. C. Loehr over David Householder.
 North Vernon—J. L. Doggett.
 Peru—John J. Kreutzer over John B. Solitt.
 Plymouth—C. S. Cleveland.
 Portland—Dr. Charles A. Paddock.
 Rensselaer—George F. Meyers.
 Richmond—Dr. W. W. Zimmerman, former Mayor, for fourth term, over Pettis A. Reid.
 Rising Sun—H. B. Steele.
 Rockport—S. E. Kercheval.
 Rushville—B. A. Black.
 Seymour—Allen Swope.
 Shelbyville—Thomas Hawkins.
 South Bend—Charles L. Goetz over D. B. J. Schaefer.
 Sullivan—Thomas E. Hoover.
 Tell City—Theodore Kefler.
 Terre Haute—Louis Gerhardt.
 Tipton—Nicholas S. Martz.
 Union City—William Harris.
 Valparaiso—William F. Spooner over Harnold Shenck.
 Vevay—Americus V. Donner.
 Vincennes—Dr. J. D. McDowell.
 Wabash—Dr. James Wilson over Dr. Moore.
 Warsaw—B. F. Richardson.
 Washington—John W. McCarty.
 Whiting—Beaumont Parks.
 Winchester—Carl Thompson.

MUNICIPAL APPLIANCES

Large Vitrified Sewer Pipe

The Blackmer & Post Pipe Company, St. Louis, Mo., has noted an increasing demand for the large sizes, over 27 inch, of vitrified pipe. It is accordingly arranging to increase its output so as to give it a greater capacity than any other exclusively vitrified clay products plant in the United States. Encouraged by the popularity of the 27 to 36-inch sizes the company has recently undertaken the manufacture of 42-inch pipe and are the only manufacturers making that size. It is claimed that where the cost of transportation is not excessive, the large sizes can be laid in the ground as cheaply as brick sewer with the following advantages: The vitrified pipe is cleaner, more durable; will not absorb or retain offensive matter, is more convenient in construction, has greater carrying capacity and can be laid with unskilled labor.

In order to determine the external pressure the large sizes of pipe would stand without breaking, samples were selected from the stock and sent to the Geo. J. Fritz Foundry & Machine Company, 2038 South Third Street, St. Louis, where they were tested as shown in the illustrations. Superintendent H. R. Gates made the tests and certified as follows:

One section 24-inch double strength vitrified pipe, 2 inches thick, broke at 27,610 pounds.

One section 24-inch double strength vitrified pipe, 2 inches thick, broke at 28,715 pounds.

One section 27-inch double strength vitrified pipe, 2 1/4 inches thick, broke at 33,133 pounds.

One section 27-inch double strength vitrified pipe, 2 1/4 inches thick, broke at 32,763 pounds.

One section 30-inch double strength vitrified pipe, 2 1/2 inches thick, broke at 27,987 pounds.

One section 30-inch double strength vitrified pipe, 2 1/2 inches thick, broke at 24,297 pounds.

One section 27-inch standard vitrified pipe, 2 1/4 inches thick, broke at 23,986 pounds.

One section 27-inch standard vitrified pipe, 2 1/4 inches thick, broke at 22,530 pounds.

One section 30-inch standard vitrified pipe, 2 1/4 inches thick, broke at 27,875 pounds.

In making the tests as shown, blocks of wood were hollowed out to fit as nearly as practicable the shape of the pipe, each block covering a little less than one-fourth of the circumference

of the pipe, the power being supplied by a hand pump and the pressure registered on the gauge. As the blocks were of hard material it was difficult to make them conform to the contour of the pipe and it is believed that the results were lower than they would have been under uniform pressure.

In view of the increasing inquiry for pipes for water conduits and other uses where extraordinary conditions might be met, two sections of pipe were pointed with cement and subjected to internal hydraulic pressure with the following results:

24-inch vitrified pipe burst at 100 pounds pressure to the square inch, showing a horizontal crack on the side from end to end.

27-inch vitrified pipe showed no weakness of the material or in the joint at 100 pounds pressure, but the bulkheads leaked so much that no more pressure could be applied.

30-inch vitrified pipe showed no weakness of material or in the joint at 100 pounds pressure, but the bulkheads leaked so much that no more pressure could be applied.

TRADE NOTES

Cast-Iron Pipe.—Chicago: Prices remain unchanged but firm. Quotations: 4-inch, \$28.50; 6 to 12-inch, \$27.50; 16-inch and up, \$26.50. San Francisco: Many inquiries have been received on which orders will probably be booked early next month, and all indications favor a satisfactory movement up to the close of the year. Quotations: 4-inch, \$39; 6 to 12-inch, \$38. Birmingham: The advance in the price of pipe is not considered as fully corresponding to the increased cost of raw materials. Shipments from plants practically equal the production. Quotations: 4 to 6-inch, \$26; 8 to 12-inch, \$25; over 12-inch, average, \$24. New York: Orders for early delivery are numerous, some of them amounting to several hundred tons. Quotations: 6-inch, car-load lots at tidewater, \$25.50.

Lead.—Lead is firmer, although there is no great demand. Both the American Smelting & Refining Company and outside interests are quoting 4.40c. New York. In St. Louis the market is stronger and 4.25c. is the bottom price.

Corliss Engines.—The Wisconsin Engine Company, Engineers and Builders, Corliss, Wis., have issued a bulletin C-4, one of a series which will be issued covering the various types of machinery they build. This bulletin describes and illustrates Corliss engines. Some data are included showing the method of estimating the size of a compound engine. The catalogue is handsomely printed and finely illustrated.

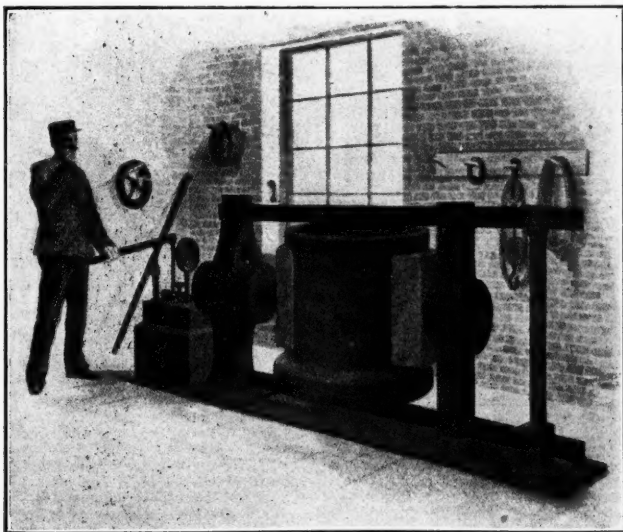
Receiver for Asphalt Concern.—Frank E. McDermot has been appointed in Jersey City, N. J., receiver for the United States and Venezuela Company, a New Jersey corporation which attempted to exploit an asphalt lake and railroad in the South American republic. Trouble with Castro brought about an abandonment of operations, but the United States Government recently negotiated a settlement whereby the company was to receive \$475,000 from Venezuela, part of which has been paid. Of late the affairs of the company have been in the New Jersey Court of Chancery, one faction working for a continuance of certain directors as trustees, while George W. Crichfield, who originally obtained the concessions in Venezuela, asked for the appointment of a receiver. His contention was sustained.

Water Works Consolidation.—Under order of the Court of Chancery, the plant of the New Castle Water Works Company, including a reservoir, was sold at Wilmington, Del., Nov. 4, to George B. Shaefer, H. E. and James E. Ahrens and John Bowman, of Reading, Pa., and William J. Yeager, of Lewistown, Pa. The purchase price was \$20,000. H. E. Ahrens, one of the purchasers, is president of the Delaware Water Improvement Company, a rival concern for supplying the city of New Castle with water, and it is believed the two systems will be consolidated.

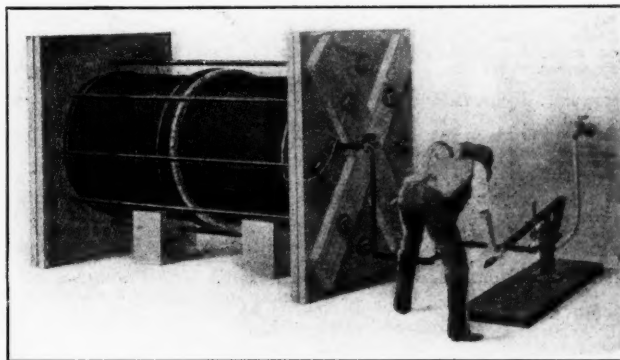
Big Reservoir.—The Androscoggin Reservoir Company, A. N. Burbank, New York, N. Y., president, is building one of the largest reservoirs in the world, located two miles from Wilson's Mills, Me., on Aziscoos Falls, on the Magalloway River, a tributary of the Androscoggin. When the work is finished in January, 1911, it will make a new lake 12 miles long, containing 8,000,000,000 cubic feet of water, which will add about 50 per cent to the existing storage capacity. The cost of the work is being paid by the corporations interested in the use of the water power. There will be no direct revenue from it.

White Portland Cement.—The Tidewater Portland Cement Company is building a Portland cement plant at Union Bridge, Md., about 45 miles west of Baltimore. The capacity of the plant will be 1,000,000 barrels a year. The limestone of this district is unusually pure and white, having barely a trace of iron. Part of the product is to be white Portland cement. Hydrated lime will also be manufactured. John K. Tener, Pittsburg, is president, and Owen B. Murphy, New York, secretary.

Change of Name.—The Sweet & Doyle Valve Company, Green Island, N. Y., has changed its name to the Sweet & Doyle Foundry & Machine Company.



TESTING VITRIFIED PIPE—EXTERNAL PRESSURE



TESTING VITRIFIED PIPE—INTERNAL PRESSURE

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Street Railways—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we can not guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STREET IMPROVEMENTS

Oklahoma.....	Alva.....	Nov. 12.....	Bldg. one mile of asphalt pavement and storm sewer.....	A. K. Hubbard, City Recorder.
Ohio.....	Cincinnati.....	Nov. 12, noon.....	Improving Cleves and Miami town roads; Spec. 975.....	Fred Dreihls, Clk. Co. Comrs.
Indiana.....	La Porte.....	Nov. 13, 10 a.m.....	Constructing macadamized road in Michigan township.....	Charles H. Miller, County Auditor.
Oklahoma.....	Oklahoma City.....	Nov. 15.....	Constructing asphalt pavement; cost, \$70,000.....	W. C. Burke, City Engineer.
Louisiana.....	Lake Providence.....	Nov. 15.....	Constructing 2 miles of concrete sidewalks.....	T. J. Powell, Mayor.
Indiana.....	Fowler.....	Nov. 15, 1 p.m.....	Bldg. stone road 9 ft. wide, 19,480 ft. long; cost, \$12,500.....	Lemuel Shipman, County Auditor.
Tennessee.....	Bristol.....	Nov. 15, 1 p.m.....	Grading and macadamizing 60 miles of road, inc. masonry, bridging, tiling, etc.....	F. G. Phillips, County Engineer.
New Jersey.....	Flemington.....	Nov. 16.....	Bldg. improved roads; Grant Davis, County Engr.; Whiteh. Sta. Bldg. subways and asphalt paving, Hoopes ave.; 2,150 lin. ft. 4-duct tile; 2,150 ft. fibre duct laterals; 40 iron pipe bends; 3,020 sq. yds. asphalt; 2,025 lin. ft. concrete curb and gutter.....	John W. Sharp, Dir. Bd. Freeholders.
New York.....	Auburn.....	Nov. 16, 8 p.m.....	Bldg. hard surface road 30.5 miles long in Road Dist. No. 1.....	C. A. Koenig, Mayor.
Oklahoma.....	Chandler.....	Nov. 16.....	Grading, macadamizing, cement curb and gutter, 6 streets.....	J. E. Ray, Clk. County Comrs.
Ohio.....	Oakley.....	Nov. 16, noon.....	Constructing granolithic sidewalks.....	Oscar Kosche, Village Clerk.
Virginia.....	Roanoke.....	Nov. 17.....	Regulating, grading and paving various streets.....	F. L. Gibboney, City Engineer.
New York.....	Brooklyn.....	Nov. 17, 11 a.m.....	Furn. material and paving block, asphalt, etc., 4 streets.....	Bird S. Coler, Borough President.
Ohio.....	Toledo.....	Nov. 18.....	Bldg. 27.5 miles of hwy., inc. clearing, grading, bldg. culverts, ditching, draining, guard rails and retaining walls around Ashokan reservoir in five towns in Ulster County.....	Reynold Voit, Secy. Bd. Pub. Serv.
New York.....	New York.....	Nov. 18, 11 a.m.....	Material and labor for grading and parking, paving roadway areas and sidewalks, setting concrete curb and gutter, etc., on Montclair Pkwy, Sub. Imp. Dist. No. 1.....	Board Water Supply, 299 Broadway.
Colorado.....	Denver.....	Nov. 19.....	Bldg. cement pavement, grading, curbing, Washington street.....	J. B. Hunter, Pres. Bd. Pub. Wks.
Wisconsin.....	Two Rivers.....	Nov. 19, 7:30 p.m.....	Bldg. 1,978 lin. ft. brick and 4,984 ft. macadam road.....	O. S. Norsman, City Clerk.
Pennsylvania.....	Harrisburg.....	Nov. 22.....	Concrete sidewalks, 96,500 sq. ft.; granite curb and concrete gutter, 17,620 lin. ft.; concrete driveways, 7,250 sq. ft.; c. i. drain pipe, 1,700 lin. ft.; work in spring.....	Jos. W. Hunter, State Hwy. Comr.
Kentucky.....	Paducah.....	Nov. 23, 3:30 p.m.....	Brick paving, 10,300 ft. of Bellaire and Wegee pike.....	L. A. Washington, City Engineer.
Ohio.....	St. Clairsville.....	Nov. 23, 1 p.m.....		E. E. Shepperd, County Auditor.

SEWERAGE

Oklahoma.....	Oklahoma City.....	Nov. 15.....	Bldg. storm and sanitary sewers to cost \$66,000.....	Bob Parman, City Clerk.
Oklahoma.....	Ada.....	Nov. 15.....	Constructing lateral sewers in Dist. Nos. 1 and 2.....	W. B. Jones, City Clerk.
Washington.....	Pt. Ward.....	Nov. 15, 11 a.m.....	Constructing sewer system at fort.....	Capt. E. C. Long, Constr. Q. M.
Kansas.....	Pt. Leavenworth.....	Nov. 16.....	Constructing a trunk sewer.....	Capt. Wm. D. Davis, Constr. Q. M.
Kansas.....	Minneapolis.....	Nov. 16.....	Bldg. sanitary sewers; plans by Burns & McDonnell, K.C., Mo. Constructing local sewers Nos. 1084 and 1085.....	O. E. Griest, City Clerk.
Ohio.....	Toledo.....	Nov. 16, noon.....	Constructing various sewers for town; 64,000 ft. 8 to 24-in. vit. pipe, laid complete with manholes and flush tanks; 850 ft. iron pipe sewers, siphons and outlet; large amount of agricultural tile laid in trench.....	Reynold Voit, Secy. Bd. Pub. Serv.
Rhode Island.....	East Providence.....	Nov. 16, 7:30 p.m.....		City Wastes Disposal Co., 156 Fifth ave., N. Y. City, Engrs.
Ontario.....	Toronto.....	Nov. 16, noon.....	Furn. 3,000 ft. 60-in. riveted steel pipe, 500 ft. riveted tapered steel pipe, 1,782 ft. 60-in. rein. concrete pipe for outfall sewer.....	Joseph Oliver, Mayor.
New Jersey.....	Morristown.....	Nov. 17, 11 a.m.....	Cleaning sewers, repairing leaky sewers, valves, etc.; put sts. in order where sewer work was done; relay sewers out of grade; install buzzer for ejector chambers, etc.....	P. H. Cooper, Chm. Sewerage Board.
Ontario.....	Dunnville.....	Nov. 18, 8 p.m.....	Mat. and labor for 18,000 ft. tile sewer system.....	J. W. Holmes, Town Clerk.
New Jersey.....	Roselle Park.....	Nov. 19, 8 p.m.....	Bldg. extensions to sewer system, Sec. 1: 29,609 ft. 8-in.; 1,284 ft. 10-in.; 3,303 ft. 12-in. pipe; 46 manholes; 11 flush tanks; Sec. 2: 14,614 ft. 8-in.; 1,380 ft. 10-in. pipe; 54 manholes, 18 flush tanks; J. Wallace Higgins, Boro. Eng.....	A. M. Woodruff, Boro. Clerk.
South Dakota.....	Salem.....	Nov. 22.....	Constructing several lateral sewers.....	N. M. Nelson, City Auditor.
Colorado.....	Denver.....	Nov. 26.....	Bldg. dist. sewers, submains, etc., at West and South side dists.....	W. B. Lowry, Pres. Bd. Pub. Wk.
Iowa.....	Traer.....	Nov. 29, 8 p.m.....	Constructing 3 miles of 8 to 15-in. sanitary sewers.....	Chas. P. Chase, C.E. Clinton.s.

WATER SUPPLY

New York.....	Newburgh.....	Nov. 15, 7:30 p.m.....	Bldg. new gatehouse and boiler house and laying about 11,000 ft. 30-in. c. i. pipe furnished by city.....	Curtis Stanton, Supt. of W. W.
Ohio.....	Cincinnati.....	Nov. 15, 2 p.m.....	Furn. and install. water system at Dam 37, Ohio river.....	J. G. Warren, Lt.-Col. U. S. Engrs.
Texas.....	Pt. McIntosh.....	Nov. 15.....	Furn. and install. complete, 2 outside center packed duplex pumps in present pump house.....	Capt. John J. Clem, Constr. Q. M.
Wisconsin.....	Milwaukee.....	Nov. 16, 10:30 a.m.....	Furn. and erect. 12,000,000-gal. pumping engine No. Pt. Sta.....	C. J. Poetsch, Chm. Bd. Pub. Wks.
New York.....	Brooklyn.....	Nov. 17, 2 p.m.....	Furn. and laying 2-track distributing mains, etc.....	J. H. O'Brien, Comr. W. S., G. & E.
New York.....	New York.....	Nov. 17, 11 a.m.....	Making test borings expected to require casing deeper than 200 ft. or attain total depth greater than 500 ft., aggregating 10,000 lin. ft. in Manhattan and Brooklyn.....	Board of Water Supply.
New York.....	Rochester.....	Nov. 17, 3 p.m.....	Rearranging water piping for fire service at State Hospital.....	T. E. McGarr, Capitol, Albany.
Michigan.....	Grand Rapids.....	Nov. 18, 8 p.m.....	Furn. and erect 2 water tube or internally fired boilers, Morison cor. furnaces, 350 to 375 h.p. each, at Wtr. and Lt. Station.....	S. A. Freshney, Gen. Mgr. Bd. P. W.
New Jersey.....	Fort Hancock.....	Nov. 19, noon.....	Bldg. 300,000-gal. rein. concrete stand pipe, 8-in. well, pump house, boilers, machinery, extending mains, etc.....	C. J. Goodier, Constr. Q. M.
New York.....	New York.....	Nov. 24, 11 a.m.....	Contract 60: Bldg. Hurley dikes of Ashokan reservoir.....	J. A. Bensel, Pres. Bd. Wtr. Supply.
Minnesota.....	Foley.....	Jan. 1, 7 p.m.....	Building complete water works system; cost, \$7,000; old bids rejected; O. Claussen, C.E., Nat'l Ger.-Am. Bk. Bldg., St. Paul.....	Frank J. Kotsmith, Village Recorder.
Nebraska.....	Carroll.....	Jan. 11.....	Constructing water works; previous bids rejected.....	City Clerk.

BRIDGES

Nebraska.....	McCook.....	Nov. 12.....	Bldg. sub., superstructures and approaches all bridges in 1910.....	Chas. Skalla, County Clerk.
Brit. Columbia.....	Vancouver.....	Nov. 12, 4 p.m.....	Bldg. bridge over False Creek, bet. Bridge and Beatty sts.; 3,375 ft. long, with 264-ft. elec. op. swing span on concrete piers, 66 deck plate girder spans, 35 to 80 ft. long on steel bents on concrete pedestals; approaches, 150 ft. long; roadway, 44 ft. wide; crec. wood floor; two 6-ft. walks.....	Mayor and City Council.
Virginia.....	Richmond.....	Nov. 13.....	Bldg. one span steel bridge 61.5 ft. long, nr. Mill, Cumb. Co.....	P. St. J. Wilson, State Hwy. Comr.
Kansas.....	Lawrence.....	Nov. 13.....	Furn. steel and bldg. 2 bridge spans, a 30-ft. girder and a 75-ft. truss; also set of steel joists and stone abutment.....	W. R. Green, Clk. Co. Comrs.
California.....	San José.....	Nov. 15, 11 a.m.....	Bldg. bridge over Campbell Creek on San Francisco road.....	County Surveyor McMillan.
Wisconsin.....	Red Cedar.....	Nov. 15.....	Repairing bridge in town to cost \$1,800.....	J. D. Miller, Chm. Town Board.
Quebec.....	Quebec.....	Nov. 15, 4 p.m.....	Removing wreckage of Quebec bridge, etc.....	R. F. D., Menomonee.
Tennessee.....	Bristol.....	Nov. 15, 1 p.m.....	Bridging, masonry, tiling, etc., on 60 miles of new road.....	L. K. Jones, Dept. Rys. & Canals.
South Dakota.....	Aberdeen.....	Nov. 16, 2 p.m.....	Constructing various bridges for county.....	John H. Caldwell, Chm. Co. Comrs.
North Dakota.....	La Moure.....	Nov. 16, 3 p.m.....	Constructing various bridges for County.....	John C. Daly, County Auditor.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
BRIDGES—Continued				
Ohio	Cleveland	Nov. 16, noon	Bldg. substructure of hwy. bridge and approaches over N. Y. C. & St. L. Ry. tracks and raising bridge over Walruth Run; 2,400 cu. yds. rein. concrete, 4,000 yds. plain concrete, 601 yds. stone masonry and 14,000 ft. piling	E. H. McIntosh, Sec'y. B. P. S.
Missouri	St. Louis	Nov. 16	Erecting superstructure of municipal free bridge	A. J. O'Reilly, Pres. Bd. Pub. Impvts
Ohio	Cincinnati	Nov. 19, noon	Bldg. bridge superstructure over creek in Green twp.	Fred Dreih, Clk. County Comrs.
Illinois	Batavia	Nov. 29	Building steel bridge over Mahanoy Creek	Town Commissioners
Quebec	Quebec	Nov. 30, 4 p.m.	Bldg. substructure of Quebec bridge	Quebec Bridge, Bd. of Engineers
LIGHTING AND POWER				
California	San Diego	Nov. 15	Lighting sts. and parks with electricity, begin. June 1st.	J. T. Butcher, City Clerk.
Oklahoma	Guthrie	Nov. 22	Install complete, heat and power plant at Insane Hospital	E. G. Newell, Supt. of Hosp. Supply.
Nebraska	Valentine	Nov. 29	Bldg. municipal power plant; W. K. Palmer Co., Engrs., 713 Dwight Bldg., Kansas City, Mo.	City Clerk.
Quebec	Montreal	Dec. 1	Water tube boiler, 1,000 h.p. of 200 lbs. pressure	Chas. Brandeis, C. E.
Maine	Portland	Dec. 1	Electric work, heating, ventilating, etc., for new City Hall	Adam P. Leighton, Mayor.
MISCELLANEOUS				
Pennsylvania	Altoona	Nov. 12, 8 p.m.	Erecting fire escapes on 3 school bldgs.	C. M. Piper, Sec'y School Board.
Washington	Olympia	Nov. 15, noon	Filling in tide flats; est. quantity, 380,000 cu. yds.	E. L. Van Epps, City Engineers.
New York	New York	Nov. 17, 2 p.m.	Furnishing and delivering cement	J. H. O'Brien, Comr. W. S., G. & E.
New York	New York	Nov. 18, 2 p.m.	Repair of granite masonry, Manh. tower foundation of Manhattan bridge	J. W. Stevenson, Comr. of Bridges.
West Virginia	Summersville	Nov. 30, noon	Constructing county jail and dwelling	P. N. Wiseman, Clk. County Court.
New York	Albany	Dec. 1, noon	Improving State Canal; 4 contracts.	F. C. Stevens, State Supt. Pub. Wks.
Dist. of Col'bia	Washington	Dec. 1, 10 a.m.	Furn. fire apparatus at various army posts, inc. 34 chemical fire engines, 11 gasoline fire engines, 1,881 fire extinguishers, 27,380 ft. 2 1/2-in. fire hose, hook and ladder trucks, etc.	Maj. H. Gray Zalinski, War Dept.
North Carolina	Raleigh	Dec. 1, 3:30 p.m.	Erecting municipal building and auditorium	P. Thornton Mayre, Arch., Atlanta.
Iowa	Des Moines	Dec. 1, 10 a.m.	Erecting, complete, City Hall, inc. heating, etc., work, etc.	A. J. Mathis, Mayor.

STREET IMPROVEMENTS

Huntsville, Ala.—City will be in market for about \$200,000 worth of paving work within next few weeks.—Address Street Superintendent Smith.

Luverne, Ala.—Crenshaw County will vote Nov. 15 on bonds for road improvements.

Marion, Ala.—Perry County Board of Commissioners is considering election on \$150,000 bonds for building and maintaining good roads.

Little Rock, Ark.—Improvement district will be formed to embrace Pine st., from 19th st. to Pulaski Heights; distance 26 blocks.

Pine Bluff, Ark.—County Judge James Gould has announced that he would soon perfect improvement district in this county for purpose of building another macadam road, 25 miles long.

Pasadena, Cal.—Council is considering paving of Broadway and Green sts.

Riverside, Cal.—Plans have been prepared by County Surveyor for four miles of 10-ft., 8-in. deep, macadam roads at Indio.

Santa Barbara, Cal.—Carpinteria District of Santa Barbara County will vote on bonds for 11 miles of asphalt concrete roads.

Bridgeport, Conn.—Council has decided upon widening of Congress st. bridge approach upon western side; matter now goes to the Board of Apportionment to provide needed funds which will amount to about \$25,000.

Watertown, Conn.—Town has voted to appropriate \$30,000 for improvement of highways.

Seaford, Del.—Sussex County Commissioners will gravel and put in condition road near this city.

Washington, D. C.—Health Department has recommended paving of alley in square between 10th st. and Vermont ave., U and V sts.; cost \$1,119.

Green Cove Springs, Fla.—Citizens have voted \$45,000 bonds for sidewalks, electric light plant and water works.

Panama City, Fla.—City is considering improvement of streets at cost of \$1,000.—R. L. McKenzie, Mayor.

Pensacola, Fla.—City Engineer L. E. Thornton has estimated cost of paving Tarragona st. with brick at \$40,894.54.

Athens, Ga.—City will pave Prince ave. early next year.

Bloomington, Ill.—Council has passed ordinance for construction of vit. brick pavement, with concrete foundation, on Madison st.; distance 1/2 mile.—Elmer Folsom, City Engineer.

Springfield, Ill.—Board of Local Improvements is preparing plans for brick paving on concrete foundations, on portions of three streets; cost \$90,000.—F. R. Hamilton, City Engineer.

Indianapolis, Ind.—Board of Public Works has confirmed three improvement resolutions.

Harlan, Ia.—Council will pave one block each way about public square next spring.

Fort Scott, Kan.—City Engineer McElroy has estimated cost of entire macadamizing of Margrave st. at \$11,107.

Wichita, Kan.—City Commissioners have passed resolution for paving 36 blocks of streets.—Bert C. Wells, City Engineer.

New Orleans, La.—Extension of paving of Louisa st. with square block is being considered.

Baltimore, Md.—Chief Engineer W. W. Crosby of State Roads Commission has been directed to prepare specifications for Baltimore and Glenburnie road, in Arundel County.

Brookline, Mass.—Town has rejected all bids for \$302,900 street, sewer and library bonds, and announced that entire loan has been placed through Estabrook & Co.

Holyoke, Mass.—City Engineer J. L. Tighe and his assistants are preparing estimates of cost of extending High st to South st.

Springfield, Mass.—Town Finance Committee has voted to recommend appropriation of \$2,000 for gravel State road between this town and Southampton.

Marquette, Mich.—County Road Commissioners have appropriated \$5,500 for constructing Witch Lake rd.

Port Huron, Mich.—Council has passed ordinance to grade Broad st.; also to build crosswalks on Wall st.—R. D. O'Keefe, Superintendent of Public Works.

Faribault, Minn.—Council has authorized City Engineer McKellip to estimate cost of paving principal streets with brick and creosote blocks.

Parkville, Mo.—City has rejected all bids for guttering Main st.; work will be done by city, under the direction of the Street Department.—J. P. Tucker, City Clerk.

Lincoln, Neb.—Bids will be received Nov. 15, 1 p.m., for \$11,225 paving bonds.—R. C. Ozman, City Clerk.

Keene, N. H.—The Mayor, Aldermen Carleton, Applin and Pierce, Councilman Watkins, Superintendent Wallace and Engineers Wardsworth and Brooks are considering best method to adopt in constructing west side State road from Swaney line to city proper; they will recommend road when finished to be 25 ft. wide and may be surfaced with selected gravel, well screened or raked, or with broken stone surface, which is preferred by city.

Orange, N. J.—Petition has been received by Council urging that body to open Parkway from Orange Park to South Orange line.

Cortland, N. Y.—Board of Public Works has decided that Clinton ave. should be paved with macadam or slag, with cement curbs and gutters, from stone bridge north to city line; work will be done next summer.

Geneva, N. Y.—City has decided to extend Geneva st.

Huntington, L. I., N. Y.—Town is considering widening of New York ave., between the Long Island Railroad station and Main st.

Lawrence, L. I., N. Y.—Village has voted \$47,000 for grading and paving certain streets.

New York, N. Y.—Plans have been completed and bids authorized for extensive improvements on Jackson ave., Queens.

Grand Forks, N. D.—Ways and Means Committee has recommended election on

\$141,000 bonds; \$75,000 will be used to pay city's share of paving.

Circleville, O.—Plans are being prepared by City Engineer J. H. Sweetman for paving about two miles of streets with brick.—J. W. Denman, Chairman Board of Public Service.

Coshocton, O.—Plans are being prepared by City Engineer A. M. Fisher for paving with vit. brick, asphalt, sheet asphalt, creosote block or equal, Locust st.—R. M. Temple, Clerk Board of Public Service.

East Liverpool, O.—Board of Service is considering repaving of Diamond st.

Lisbon, O.—Plans will be prepared by Engineer French for grading and improving Sprucevale hill in St. Clair Township.—C. H. Cobourn, Auditor Columbiana County.

Marion, O.—County has sold \$2,900 road bonds to J. B. Guthery, city.

Portsmouth, O.—Bids will be received by Board of Public Service for paving and grading portions of various streets.—J. J. Hudson, City Engineer.

Wellington, O.—City has awarded \$10,000 street improvement bonds to Davies-Bertram Company at \$463 premium.

Youngstown, O.—Council is considering petitions for sewers on Augusta and Buckeye sts.; \$14,000 bonds will be issued for extension of Burke st.

Anadarko, Okla.—Plans are being prepared by Southern Engineering Co., Lee Bldg., Oklahoma City, for paving.

Oklahoma City, Okla.—City is considering paving of 23d and three other streets.—H. M. Scales, Mayor.

Putnam, Okla.—Plans have been prepared by Engineer E. C. D'Yarmett, Bassett Bldg., Oklahoma City, for street paving in suburb by Putnam Company, Campbell Bldg., Oklahoma City.

Shawnee, Okla.—Bids will be received in about 20 days for asphalt paving; cost \$40,000.—F. D. Brown, City Engineer.

Grants Pass, Ore.—Council will soon let contracts for six blocks of paving.

Roseburg, Ore.—County Commissioners are considering purchase of rock crusher to be used in construction of county roads.

Butler, Pa.—City will at once sell \$25,000 paving bonds.

Chester, Pa.—Citizens will vote in February on \$600,000 loan bill; \$222,220 is provided to defray cost of paving; \$22,000 for building retaining wall and curbing and improving 9th st.; also \$3,200 for grading 5th st. and \$200,000 for repaving streets.

Greensburg, Pa.—F. F. Hallam, Engineer of State Highway Department, has announced that Department has just finished surveys for new State road to connect Vandergrift and Vandergrift Heights, then to extend to Apollo through Allegheny and Bell Townships; complete surveys will now be made for extension of present State road to Delmont from Greensburg, and on to Lamont, North Washington and Paulton to Vandergrift.

New Castle, Pa.—Council is considering improvement of Pittsburg st. and grading of Erie ave.

Pittsburg, Pa.—Citizens have voted \$600,000 bonds for cutting down "the Hump" and \$900,000 for other street improvements.

Scranton, Pa.—Scranton Automobile Association has guaranteed \$2,000 for com-

pletion of paving of road through Moscom Borough.—Ed. O. Clarke, Chairman Good Roads Committee.

Upland, Pa.—Borough Council has decided to widen Upland ave.

Williamsport, Pa.—Council is considering ordinance authorizing purchase of asphalt repair plant and appropriating \$600 for that purpose.

York, Pa.—Petitions for about 100,000 more sq. yds. of paving of city streets under per-foot-front rule, will be ready for presentation to Council within short time.

Carthage, Tenn.—Smith County will vote Feb. 26 on \$100,000 road bonds.

Mountain View, Tenn.—Citizens have voted \$20,000 bonds for improvements to streets and school building.

Austin, Tex.—Proposed paving will include 4,600 sq. yds. brick and 50,000 sq. yds. of bitulithic; cost \$118,000.—G. S. Ireland, City Engineer.

Hempstead, Tex.—Precinct No. 1 of Waller County will vote on \$25,000 bonds for road improvements.

Marshall, Tex.—Rusk st. will be macadamized.

San Angelo, Tex.—Parked streets in residence section as a means of beautifying thoroughfares and also reducing cost of oiling process, have been agreed upon by Special Committee appointed by the Business Club to investigate matter.

Timpson, Tex.—Shelby County Commissioners, Center, are considering election on formation of Road District No. 7 and issuance of \$50,000 of bonds for road improvements.

Weatherford, Tex.—Council has ordered sidewalks laid on Palo Pinto and two other streets.

Alexandria, Va.—City Engineer has reported the cost of improving Columbus st. to city limits; figures given were from \$600 to \$4,600.

Big Stone Gap, Va.—City will purchase 10-ton roller; also rock crusher of good capacity.—John W. Chalkley, Chairman Street Committee.

Lynchburg, Va.—City and Campbell County are considering street improvements, including changing grades, paving and macadamizing; Brookville District Road Board, John T. McKinney, Chairman, will soon award contract for paving and macadamizing.

Norfolk, Va.—Council has concurred with Board of Aldermen in adopting over Mayor Riddick's veto, ordinance appropriating \$67,400 for permanent improvements in Greater Ghent section.

Roanoke, Va.—Council has adopted a resolution for election on \$400,000 bonds for city improvements.

Colville, Wash.—Half of walks in business district will be concreted this fall.

Ellensburg, Wash.—Council has adopted plans providing for macadamizing and construction of sidewalks on a portion of 3d st.

Seattle, Wash.—Board of Public Works is considering paving of Virginia st. with vit. brick.

Spokane, Wash.—County Commissioners will readvertise for bids for work on Forker and Regal roads.

Tacoma, Wash.—Council has adopted ordinances ordering improvement of Union and McKinley aves. and two other streets.

Wenatchee, Wash.—Council has decided to pave three blocks on Mission st.

Beloit, Wis.—Council has instructed City Engineer R. R. Caldwell to prepare plans for paving of Pleasant st.

Madison, Wis.—Council will improve State and other streets in university section with asphalt paving.

Milwaukee, Wis.—Chicago, Milwaukee & St. Paul Railway Company will expend \$10,000 in building brick pavement and cement walks made necessary by construction of Kinnickinnic ave. tunnel.

BIDS RECEIVED AND CONTRACTS AWARDED

Huntsville, Ala.—Council has awarded a contract to R. S. Blome Co., of Chicago, for paving Holmes st., from Pulaski pike to Pratt ave., a distance of 1½ miles; material to be used will be the Blome granite block.

Denver, Col.—Municipal Construction Co. has secured contract for constructing concrete sidewalks on portions of 6th, 7th and 8th aves., at cost of \$24,982.

Hartford, Conn.—Highway Commissioner J. H. MacDonald has awarded contracts for work on highways as follows: Town of Bethlehem—For the construction and grading of 7,787 lin. ft., awarded to Edward Tracey, of Derby, for \$5,875; in addition, telford base for 65c. per lin. ft., rubble drain 75c., wood railing 50c. Town of Goshen, two sections—Section 1, on the West Goshen Road, for grading 2,600 lin. ft., to Joseph Marcetti, of Torrington, for \$2,768; Sect. 2, on the West Cornwall Road, 2,350 ft., awarded to Goodman & Trumbull, of Litchfield, for \$2,780.

Belleville, Ill.—Reeb Bros., city, have secured contract for paving portions of Bowman and Exchange aves. and 7th st. for \$20,286.

Greenville, Ill.—Contract for paving portion of College ave. has been awarded to Reeb Bros., of Belleville, for \$15,662.

Homer, Ill.—Huffman, Townsend & Co. have secured contract for paving portion of 1st st. for \$17,688.

Moline, Ill.—Joint contract for paving with brick of 15½ st., between 10th and 12th aves., and 12th st., between 12th and 14th aves., has been awarded by Board of Local Improvements to McCarthy Improvement Co., Davenport, Ia.

Springfield, Ill.—Contract for paving New st. with brick, bids opened Nov. 1, has been awarded to John E. Bretz, of Springfield, at \$1.50 per sq. yd. for paving and 40c. per lin. ft. for curb and gutter.—John S. Schnepf, Mayor.

South Bend, Ind.—Contract for paving Howard ave. has been awarded to Peter Brothers Paving Co. by Board of Public Works. Pavement will be built of Obispo asphalt.

Boston, Mass.—J. B. O'Rourke & Co. have secured contract for paving S. Market st. at \$12,352. Contract for paving with macadam Corbett st. has been awarded to Jas. H. McCarthy for \$5,424.

St. Paul, Minn.—Contract for paving 10th st. from Wabasha to Jackson with vitrified brick has been awarded by Aldermen to Fielding & Shepley for \$15,378. The engineer's statement was \$17,625.

St. Paul, Minn.—Lowest bid received by Board of Public Works for grading Snelling ave., from Randolph to 7th st., exceeds 25 per cent of the assessed valuation by about \$5,000, and was therefore rejected. The engineer's estimate was \$22,402, and the lowest bid was that of O'Neil & Preston for \$21,490.—L. W. Rundlett, City Engineer.

St. Joseph, Mo.—Board Public Works, Oct. 21, awarded contract for paving portion of 5th and Olive sts. with sandstone block to Young Bros. at \$3.23 per sq. yd.

Lincoln, Neb.—Bids have been opened by County Clerk for grading Lincoln Park blvd., from South st. to Salt Creek; about 21,000 yds. of earth are to be moved. Lowest bidder was L. L. Young, at 13½c. per yard. The other bidders were C. E. Barney, 16c.; Robert Malone, 20c.; McGerr & Morrissey, 15c.; F. Walworth, 17c.

Newark, N. J.—Board of Works, Oct. 29, awarded contract for paving S. Canal st. with granite blocks to the Jersey Paving Co. for \$9,458.

Perth Amboy, N. J.—High st., from Smith st. to Market st. and around city hall park, is to be paved with asphalt block without further delay. Board of Aldermen has awarded contract for work to Hastings Pavement Company in accordance with their bid of July 19, which was as follows: Excavation, \$1.26; concrete, \$6.16; old curb, 50 cts.; circular concrete curb, \$1.28; new curb, 80 cts.; asphalt blocks, \$1.68.

Brooklyn, N. Y.—Bids were opened Oct. 28 by Park Board for regulating, grading and paving or repaving with asphalt on concrete foundation Parkside ave., and the lowest bid was that of Brooklyn Alcatraz Asphalt Co., 407 Hamilton ave., Brooklyn, at the following bid: 15,300 sq. yds. asphalt pavement, 85c.; 2,700 cu. yds. concrete, \$4.25; 2,200 lin. ft. new curb, 62c.; 2,200 lin. ft. old curb, reset, etc., 30c.; 25 noiseless covers and heads complete, each, \$14; 3,400 cu. yds. earth excavation, 30c., and 3,130 lin. ft. bluestone header, 30c.; total, \$28,813. Totals of other bids: Barber Asphalt Paving Co., 30 Church st., \$33,616; Cranford Co., 190 Montague st., Brooklyn, \$31,076; Uvalde Asphalt Co., 1 Broadway, \$28,966.

Ft. H. G. Wright, N. Y.—Jos. Bervenni, of New London, Conn., has secured contract for constructing roads, walks, etc., at Fort for \$5,670.

New Brighton, S. I., N. Y.—Contracts for regulating and repairing various streets in the Borough of Richmond, bids opened Oct. 26, were awarded by Borough President as follows: To Dominick Bonnacel, of Brooklyn, N. Y., furnishing material required for regulating and repairing with vit. brick pavement on concrete foundation roadways on Bond st., at \$18,191, gutters on Barker st. at \$21,264 and on Henderson ave. at \$17,725, and roadway on Morningstar rd. \$22,406; to Wm. Londino, of Brooklyn, N. Y., for gutters on Bay ave., \$25,981, and to Atlanta Construction Co., repairing with granite block on concrete foundation, Hyatt st. at \$5,103.

Rochester, N. Y.—Board of Contract and Supply has awarded following contracts: Frost ave. walks, J. J. Regan, \$816.50; Marigold st. walks, John Calnan, \$334.75; Home pl. walks, John Calnan, \$301; Bradley st. sewer, John Petrossi Co., \$758.75; Marlow st. sewer, N. Desiderio, \$775.25.

Syracuse, N. Y.—The Board of Contract and Supply has awarded to the Central City

Paving Co. the contract for paving Bryant ave. from South Wilbur to Avery ave.

Cincinnati, O.—Park Commission has let to Charles Kuhl Artificial Stone Co. contract for constructing 8-ft. cement sidewalk on Hunt st. at \$1.815; and to Billings Artificial Stone Co. for improving triangle at Rochelle, Falke and Vine sts. at its bid of \$559.65.

Cleveland, O.—Board of Public Service has awarded contract for paving sections of E. 49th st., and E. 86th st.

Dayton, O.—Bids have been received by Servers for paving Helena st. Five proposals were submitted, lowest on brick being that of William J. Kernan, on Trimble block, at \$3,973.40.

Elyria, O.—Asphalt Block Paving Co., Toledo, has secured contract for paving in Elyria; cost \$5,700.

Oklahoma City, Okla.—City has awarded contracts on the paving which amounts to over one-half million dollars. In each instance the contract was awarded to firm having the lowest bid on each street or district and resulted in most of contracts being awarded to the Cleveland-Trinidad Paving Co., although Western Paving Co. were low bidders on two streets and were awarded the contracts on these particular streets. Contracts secured by the Cleveland-Trinidad Co. were about 7 miles of the paving and are as follows: 3d st., \$14,624; Hudson ave., \$98,407.25; 34th st., \$25,254.70; Lindsay ave., \$10,153; Classen blvd., \$101,244.50; Durland ave., \$13,373.25; Laird, \$13,507; Oklahoma ave., \$8,188.70; Flynn and Barnes and 20th st., \$23,412.75; Robinson ave., \$12,348.25, and 10th st., \$10,378.50.

Butler, Pa.—Council has opened bids for paving portion of Sullivan ave., the bid of Tony Morelli being the lowest to be submitted. DuBois and Butler brick were adopted for paving street; bids were as follows: Tony Morelli, brick, \$1.15; grading, 25c. per cu. yd.; stone curb, 48c. per ft. N. J. Boyer, brick, \$1.23; grading, 25c.; curbing, 50c. John Schaffner, brick, \$1.24; grading, 25c.; curbing, 55c. Awarding of contract was left with Paving Committee.

Butler, Pa.—Bids have been opened for grading and paving 8th ave. There were three bids submitted and contract was let to J. G. McGuire & Co., of New Brighton.

Greensburg, Pa.—Allegheny County Commissioners have let contracts for 9.96 miles of improved roads; paving is to consist of a concrete foundation with brick surfacing; the total cost will be \$208,158.04, or about \$20,000 a mile. The successful bidders follow: Nobletstown extension No. 2, nine-tenths of a mile, to the McLaughlin Contracting Co., for \$13,672.70; Lock No. 3 and Elkhorn, 4.04 miles, to Henry Bolard, of McKeesport, for \$83,327.79; Braddock and Greensburg pike No. 1 connecting, nine-tenths of a mile, to the Collins-Gordon Co. for \$22,795.70; Greensburg pike No. 2, 4.12 miles, to the Collins-Gordon Co. for \$88,261.85.

Harrisburg, Pa.—Highway Commissioner Caldwell has opened bids for grading Emerald st. from Front to 5th st. Following were proposals: Central Construction and Supply Co., \$8,562.96; United Ice and Coal Co., \$8,793.40; Stucker Brothers' Construction Co., \$8,990.

South Bethlehem, Pa.—Chairman Rankey, of the Street Committee, submitted samples and prices for crossing bricks to Council, as follows: Auburn No. 1, per M, \$21.75; Auburn No. 2, per M, \$17.25, f. o. b. South Bethlehem; the action of the Street Committee in ordering 5,000 No. 2 grade at \$17.25 per M was approved.

Knoxville, Tenn.—The successful bidder for the grading contract on Pritchard and Ninth sts. was C. O. McCarley, whose bid for earth excavations was 30c. per cu. yd.; Jones & Jones bid 47½c.

Manchester, Va.—City has awarded contract for street paving to J. W. Cleary and H. H. Pilkinton, Norfolk, at \$4,762.50.

Staunton, Va.—Augusta County Board of Supervisors has awarded contract to R. S. Payne to construct four and one-half miles of Greenville rd.

Ft. Worden, Wash.—John J. Stockland, Port Townsend, has secured contract for constructing sidewalks and drains for \$4,874.

Walla Walla, Wash.—But one bid, that of the Barber Asphalt Co., was submitted on the paving of North Palouse st., Local Improvement Dist. No. 51, and the Street Committee recommended that the same be accepted at \$2.10 per sq. yd. for pavement, and a maintenance fee of 2½c. per sq. yd. for a period of five years. The bid is identical with those submitted for other districts.

Milwaukee, Wis.—Board of Public Works has awarded paving contracts as follows: To Badger Construction Co., Railway Exchange, Milwaukee, asphalt paving on Sycamore st., from West Water to 3d sts., at \$2.50; R. J. Hickey, Milwaukee, creosote wood block pavement on 11th st., from Cedar to State sts., \$2.58; Hase & Welher, Milwaukee, brick pavement on 1st ave., from Greenfield ave. to Mitchell st., \$1.82½.

SEWERAGE

Phoenix, Ariz.—Council is considering plans of Olmsted & Gillelen for system of city sewerage; plans call for expenditure of \$238,000, which does not include reconstruction of present system or the purchase of it from present owners.

Fitchburg, Cal.—Citizens have voted \$75,000 worth of sanitary sewer bonds.

Newman, Cal.—Citizens have voted \$32,000 bonds for construction of septic sewerage system.

San Bernardino, Cal.—City is considering construction of sewer on Livingston st.—A. L. Sloan, City Engineer.

San Francisco, Cal.—Resolutions have been passed asking Supervisors to set apart \$190,000 for sewer at Hunter's Point and \$96,000 for section D of North Point sewer; bids for sections H and J of this sewer will be received by Board Nov. 10.

Denver, Col.—Board of Supervisors has adopted resolution establishing South Side Special Sanitary Sewer District No. 5.

Bartow, Fla.—City has completed plans for construction of proposed sewer system.—W. W. Lyon, Jacksonville, Engineer in Charge.

Hastings, Fla.—This city will soon install sewer system; central portion will be sewer first.

Dublin, Ga.—Citizens have voted \$40,000 bonds for construction of sewer system.

Bement, Ill.—City will install sewerage system. City Engineer J. R. Bower has completed ordinance which provides for main drain, two branches and three sub-drains; cost will be \$28,000.

Farmington, Ill.—City is considering construction of sewer system; Aldermen Smith and Scudder, Committee.

Traer, Ia.—City will receive bids Nov. 29, 8 p. m., for about three miles of 8-in. to 15-in. sanitary sewers.—Chas. P. Chase, Iowa Engineering Co., Clinton, Engineer.

Caldwell, Kan.—Plans are being prepared by Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., for sewer system; cost \$50,000.

Norton, Kan.—City has not let contract for construction of 1½ miles of 12 and 10-in. vit. pipe sewer.—J. T. Worley Co., Reliance Bldg., Kansas City, Mo., Engineer; R. W. Hemphill, City Clerk.

Mt. Sterling, Ky.—Citizens have voted bond issue for installation of sewerage system.

Winchester, Ky.—Citizens have voted \$65,000 sewerage bonds.

New Iberia, La.—City is considering installation of sewer system.

Greenfield, Mass.—Committee appointed by town to take sewage out of Green River has decided to select Consulting Engineer, to be recommended by the State Board of Health, to look over work done and make recommendations.

Alexandria, Minn.—Council has approved plans for construction of sanitary and storm water sewers on Main st.

Duluth, Minn.—City Engineer has been instructed to prepare estimates of cost of transforming Brewery Creek into sanitary and storm sewer, from 2d st. to 8th ave., east; work will be done by inclosing the creek in concrete culvert.

Worthington, Minn.—Citizens have voted \$27,000 sewer and refunding bonds.

Cameron, Mo.—Council is considering construction of system of sewers.

Havelock, Neb.—City Engineer Barnes has made surveys for construction of sewer to drain into Salt Creek; cost at least \$30,000.

Chatham, N. J.—Citizens will vote Jan. 11 on installation of sewage disposal plant.

Newark, N. J.—Tentative plans for sedimentation basins to be used in connection with proposed Passaic Valley intercepting sewer are now being prepared by Edlow W. Harrison, Chief Engineer for the Passaic Sewerage Commission.

Plainfield, N. J.—Sewerage Commission will recommend to Council construction of sewerage system at total cost of \$270,000.

Washington, N. J.—Council has passed two resolutions for construction of system of sewers.

Binghamton, N. Y.—City Engineer John A. Giles has completed plans for construction of Helen st. sewer; plans provide for sanitary and storm water sewer.

Lawrence, L. I., N. Y.—Village has voted \$3,000 for construction of catch basins.

Plattsburg, N. Y.—City has not let contract for constructing 1,800 ft. of 12-in. tile sewer on Cornelia st.—Wm. D. Savage, Superintendent.

Rochester, N. Y.—Council has adopted ordinance providing for construction of sanitary and storm water sewers in two streets; cost \$25,000; also construction of a similar system in University ave.; cost \$14,000.

Andrews, N. C.—City has decided to construct sewerage system.—H. N. Wells, Mayor.

Carrington, N. D.—City is planning to install sewer system.

Bellefontaine, O.—Council has passed ordinance for issue of \$25,000 bonds for purchase of plans and building of disposal plant for sewerage system.

Forest, O.—City has selected Engineer Champe, The Nasby, Toledo, to prepare plans and specifications, with estimate of cost for construction of sewer system.

Portsmouth, O.—Bids will soon be received by Board of Public Service for constructing about 1,000 ft. of 4½ and 5-ft. vit. brick sewer on 18th st.; cost \$6,500.—J. J. Hudson, City Engineer.

Anadarko, Okla.—Plans are being prepared by Southern Engineering Co., Lee Bldg., Oklahoma City, for sewers.

El Reno, Okla.—City has rejected all bids for constructing nine blocks of vit. pipe storm sewers; work will be readvertised.—R. N. Whittlesley, City Engineer.

Oklahoma City, Okla.—City will create sewer district in Riverside Addition.—Rob. Parman, City Clerk.

Oklahoma, Okla.—Bids will be received in about 30 days for construction of sewers and septic tank; cost \$195,000; also for storm sewers; cost \$30,000.—W. C. Burke, City Engineer.

Tulsa, Okla.—Collinsville has voted bond issue to complete system of sanitary sewerage.

Klamath Falls, Ore.—Council is considering readvertising for bids on \$45,000 bonds for constructing sewer system.—O. T. Sanderson, Mayor.

Chester, Pa.—Mayor Johnson has signed \$600,000 loan bill; citizens will vote in February; \$82,500 is provided for extension and improvement of sewer system.

Indiana, Pa.—Borough Engineer Thos. Pealer will prepare plans for sewer system from Normal School to Wayne ave.

New Castle, Pa.—Council is considering construction of sanitary sewer in two streets and storm sewers in Pittsburg st.

South Bethlehem, Pa.—Plans have been ordered secured for storm sewers in southeastern part of borough.

Cumberland, R. I.—Valley Falls Business Men's Association will consider installation of sewer system in lower part of town.

Providence, R. I.—Sewer Commissioners have advertised for bids for construction of sewers in Watchemoket Fire District.

Dallas, Tex.—City Secretary has been instructed to advertise for bids for storm sewer on Jackson ave.; estimated cost \$2,588.

Houston, Tex.—Plans have been prepared by Engineer P. L. Dormant for proposed Fourth Ward sewer; plans call for 12-in. sewer in four streets.

Tacoma, Wash.—Council has adopted ordinance providing for construction of sanitary sewer in District No. 191.

Wenatchee, Wash.—City will install sewerage system next spring; cost \$100,000; contracts approximating \$150,000 for re-grade work will be let this fall.

Fond du Lac, Wis.—City has rejected all bids for construction of sanitary sewer in Dix st.

Hamilton, Ont., Can.—Sewer Committee has estimated cost of West End sewer and disposal works at \$110,000.

BIDS RECEIVED AND CONTRACTS AWARDED

Berwyn, Ill.—The Charles M. Porter Co., 84 LaSalle st., Chicago, has been awarded contract at \$17,038 for constructing sewer in 15th st. and other streets.

Indianapolis, Ind.—Board of Public Works has awarded following sewer contracts: Sewer in Sutherland st., from 30th st. to a point 1,620 ft. north, to the Reliable Construction Co. at \$2.25 per lin. ft.; sewer in Park st., from Highland drive to 42d st., to Sheehan Construction Co. at \$2.22; sewer in Ruckle st., from the center of Highland drive to a point 38 ft. south of 42d st., to Manley-O'Donnell & Co. at \$1.91; local sewer in Broadway, from Highland drive to 42d st., to John Jenkins at \$2.51; local sewer in the alley north of Minnesota st., from a point 51 ft. east of the third alley east of East st., to a point 47 ft. east of the first alley east of East st., to A. Bruner Co. at \$1.05; local sewer in Pennsylvania st., from 38th st. to a point 39 ft. south of 42d st., to the Commercial Construction Co. at \$2.14.

Terre Haute, Ind.—Contracts for sewers were awarded, Oct. 19, as follows: To M. McBride, for sewers on 11th, 20th and Ash sts., for \$6,150; to W. H. Harris for sewers on 11th and 12th sts. and Washington ave., \$3,700; to W. J. Eller, sewers on 7th st., \$3,500, and to O'Leary & Son, sewers on Lafayette ave., \$5,900.

Bettendorf, Ia.—Bids were opened Oct. 25 for constructing sewer system of about 3 miles of 8 to 18-in. pipe sewers, disposal plant and 4,020 cu. yds. rock excavation from plans of Chas. P. Chase, of Clinton, and the contract has been awarded to the People's Construction Co., of Davenport, for \$16,297. Other bids received were:

T. Carey & Sons, Clinton, \$19,509; Hydraulic Construction Co., Davenport, \$21,346; Independent Construction Co., Davenport, \$22,705; Davenport Construction Co., Davenport, \$24,925, and Eul, Cochems & Nebel, Sturgeon Bay, Wis., \$29,297.

Charles City, Ia.—O'Farrell Contracting Co., Dubuque, has been awarded contract at \$5,562 for constructing six sewers.

Davenport, Ia.—Bids for new sewer on Prairie st., Wilkes ave., Pleasant, Davie, High and Division sts., have been opened by Board of Public Works. The bid of the Davenport Construction Co. was 70 cents per lineal ft. and that of D. G. Lloyd was 73 cents. Contract will therefore be awarded to former.

Oswego, Kan.—Contract for constructing sewer system, bids opened Oct. 23, has been awarded to Alex. McOrth, city.

Wichita, Kan.—John M. Chain, city, has been awarded contract for constructing sewers on five streets at \$12,429.45. M. M. McKee, city, contract for lateral on Indianapolis ave., at \$13,214.50, and McIntire & Teese, city, contract for lateral on Hunter and Fannel ave., at \$13,895.44. Total amount of all bids received for laterals for storm water sewer No. 5 were as follows: J. M. Chain, \$40,817.30; M. M. McKee, \$40,304.45; McIntire & Teese, \$40,323.84, and John Iffler, Springfield, Ill., at \$43,194.50.—B. C. Wells, City Engineer.

Ft. St. Philip, La.—Aiken O'Reilly Company, 309 Wells-Fargo Bldg., New Orleans, has received contract for sewerage system.

Boston, Mass.—Contract for constructing sewers in Kingsdale st. and Talbot ave. has been awarded to E. F. Kenneally for \$3,103.

Buffalo, N. Y.—Commissioner F. G. Ward, of the Department of Public Works, Oct. 30, opened five bids for removing present trunk sewer outlet and the construction of a new trunk sewer outlet under the Black Rock harbor and channel at the foot of Albany st., and the lowest is the Buffalo Dredging Co., whose bid was \$110,000; other bidders are Busch & Percival, \$145,000; the Eastern Concrete Steel Co., \$144,349; William Franklin, \$140,000, and Joseph F. Stabell & Co., \$118,644. This work is made necessary on account of the proposed widening and deepening of the Black Rock Ship Canal. At present the trunk sewer is laid at a depth of 12 ft., but when the canal is widened to 200 ft. and deepened to 23 ft. the sewer outlet must be lowered below that depth; work is difficult as it will be necessary to go 40 ft. below water level before the trunk can be laid. As soon as the low bidder has been authorized to go ahead with the work and the contract is let, the work will begin, for it must be completed before July 1, 1910. A bond issue for \$150,000 has been authorized for the work.

Hamilton, O.—Board of Public Service, Nov. 2, received following bids, as tabulated by City Civil Engineer, for construction of storm sewer on Ludlow, from Benninghofen to Pleasant ave., Lindenwald, estimated cost \$972.75; J. H. Trunk \$38.50; F. J. Davis \$900. Award of contract was temporarily deferred.

Following bids were received for sanitary sewer on South G st., estimated cost \$2,697.60: R. F. J. Davis \$2,697.60. Contract awarded Davis.

Nashville, Tenn.—T. V. Barnesfield has secured contract for sewer in Alley 201, between 3d and 4th aves., about 1,000 ft., for \$4,384.

Dallas, Tex.—Bids have been opened for construction of 6-in. sanitary sewer in alley between Pennsylvania ave. and Bell west from Hurst. Bidders were C. W. Olcott at \$155 and Dallas Home Improvement Co. at \$171.50. For a like work on Cedar Springs, between Highland and Argyle, the bids per ft. of excavation were as follows: George S. Vivian, 40c., 45c. and 57c.; Dallas Home Improvement Co., 38c., 48c. and 60c.; C. W. Olcott, 40c., 45c. and 65c. These were referred.

Eureka, Utah.—Tibby & Jordan, Salt Lake City, have been awarded contract at \$6,932 for constructing sewer system for this city; work includes following: 3,000 cu. yds. of earth excavation; 50 cu. yds. of rock excavation, 6,450 lin. ft. of 8-in. vit. pipe sewer, 40 cu. yds. of concrete masonry, 80 cu. yds. of brick masonry.

Salt Lake City, Utah.—The following bids were received, Oct. 29, for sewer extension No. 236: Griffin & Johnson, \$842.06; Gillerson & Long, \$858.55, and J. D. Harvey, \$1,168.56.

Wheeling, W. Va.—Contract for sewers at new high school building has been let to Geo. W. Caldabaugh & Co., of the South Side.

Portage, Wis.—Council has awarded contract for proposed sewer system to D. J. Christopher, of Chicago, Ill., for \$48,286.

Two Rivers, Wis.—W. O. Baker, Manitowoc, has secured contract for constructing 3,840 ft. of 15 to 8-in. pipe sewers on E. River, 22d and other streets for about \$4,200, bids opened Oct. 20.

WATER SUPPLY

Bisbee, Ariz.—Superintendent A. M. Martin, of Water Works, is preparing estimate of cost of enlarging present fire service system.

Douglas, Ariz.—Citizens have voted \$325,000 bonds for purchase of private water works plant.

Fayetteville, Ark.—Council has voted to lay pipe to Clear Creek and establish water works; distance four miles; cost \$24,000.

Pasadena, Cal.—Council has selected A. L. Sonderreger, Los Angeles, to prepare plans for distributing system and for additional sources of water supply.

Porterville, Cal.—City is considering installation of water meters.

Colorado Springs, Col.—City will improve water mains in down town streets; estimated cost \$10,000.

Green Cove Springs, Fla.—Citizens have voted \$45,000 bonds for water works, electric light plant and sidewalks.

Panama City, Fla.—City is considering an expenditure of \$8,000 for water works.—R. L. McKenzie, Mayor.

Dublin, Ga.—Council is considering installation of 500-h.p. boiler, engine and generator in water and light plant.

Idaho Falls, Ida.—City is considering installation of new water works system and power plant; cost \$100,000.

Creston, Ill.—Citizens have voted \$2,000 water works bonds.

Hinckley, Ill.—Village will extend water works system to new Oak Knoll Addition.

Lincoln, Ill.—City will extend water mains on two streets.

Mackinaw, Ill.—Village Trustees are considering laying of about 9,000 ft. of 4-in. water mains.

Summit, Ill.—Board of Trustees has rejected all bids for construction of concrete reservoir and pumping station; new bids will be called for.—W. B. Ewing, 1003 Chamber of Commerce, Chicago, Consulting Engineer; Jas. Johnston, Village Clerk.

Waukegan, Ill.—Board of Local Improvements has ordered Council to prepare ordinance for constructing water main on three streets.—Edw. P. DeWolf, Secretary.

Waukegan, Ill.—Council has rejected all bids for construction of settling well at the water works; Architect Ira A. Worsfold has been instructed to advertise for new bids.—H. Thacker, City Clerk.

Evansville, Ind.—Board of Water Works has ordered laying of 6-in. mains along Florence and Park sts.

Fortville, Ind.—Town is considering installation of water works system.—Bert Bills can be addressed.

Indianapolis, Ind.—Indianapolis Water Company has been asked to place 23 fire hydrants over city by Board of Public Works.

Shelbyville, Ind.—City will lay mains on several streets.—Address Superintendent Barlow.

Dodge City, Kan.—Bids will be received Dec. 15 for purchase of \$100,000 bonds; proceeds will be used for construction of water works.—J. E. Worley, Kansas City, Mo., Engineer.

Spearville, Kan.—Proposals will be received for water works machinery and supplies.—Address Box 63.

Wakefield, Kan.—Election will be held about Dec. 1 to vote on construction of water works.

Plaquemine, La.—Municipal water works and electric light plant has been destroyed by fire.

Pontiac, Mich.—Citizens have voted \$82,000 bonds; it is intended to build two million gallon reservoir and to lay several miles water main extensions, to pick up dead ends, thus giving city better supply, also to furnish water to outlying districts.

Holdingford, Minn.—Bids will be received Nov. 13, 8 p. m., for \$5,000 bonds for construction of water works system.—J. A. Winkler, Village Recorder.

Gulfport, Miss.—City Engineer M. F. Sullivan has prepared plans for proposed extension of water system; principally 6 and 8-in. piping; cost \$34,000.

Armistead, Mont.—City will install water works system; cost \$310,000.

Harlowton, Mont.—Construction of water works system is being considered.—S. Campbell, City Clerk.

Helena, Mont.—Citizens will vote Jan. 12 on \$650,000 water works bonds.

High Bridge, N. J.—Borough Surveyor William R. Carson has estimated cost of new water plant at \$35,000 and advised bonding borough for that amount; Mayor J. Henry Rose has been appointed Committee to obtain right-of-way and settle with property owners for new water plant; spiral riveted pipe will be used to convey water.

Newark, N. J.—Board of Works will ask Council to issue \$100,000 of water works extension bonds.

Patterson, N. J.—City will acquire Thorn property in township of Pompton as part

of site necessary for construction of reservoir and necessary water works.

Newburgh, N. Y.—Water Commissioners have rejected bids received for gate valves; through error, bids had been asked for valves instead of sluice gates; bids will now be advertised for latter.

Woodside, L. I., N. Y.—Woodside Heights Land Co., 1123 Broadway, New York City, will receive bids for construction of pumping station and laying about 3,000 ft. of 10-in. c. i. pressure main.

Grand Forks, N. D.—Ways and Means Committee of Council has recommended election of \$141,000 bonds; \$16,000 will be used for paying city's share of water mains and \$25,000 for changing location of intake pipe.

Dayton, O.—Winchet Fertilizer Company will erect pumping station to clear drains.

Fremont, O.—State Board of Health is urging installation of filtration plant.

Mason, O.—Construction of water works and electric light plant is being considered.

Tremont, O.—State Board of Health is urging city to construct filtration plant.

Collins, Okla.—Citizens have voted to issue \$37,500 bonds for water works and sewers.

Cushing, Okla.—Citizens will soon vote on \$25,000 bonds for construction of water works system.

Dustin, Okla.—Names and addresses of contractors installing water works will be received by Roy Alexander, Secretary M. O. & G. Immigration Co.

Putnam, Okla.—Plans have been prepared by Engineer E. C. D'Yarmett, Bassett Bldg., Oklahoma City, for system of water works and electric light for Putnam Company, office of Company, Campbell Bldg., Oklahoma City.

Tulsa, Okla.—Collinsville has voted large bond issue to install water works system and complete system of sanitary sewerage.

Weatherford, Okla.—Plans have been finished by Engineers Macintosh, Barber Co., Bassett Bldg., Oklahoma City, for system of water works and sewers; cost \$100,000.

Wewoka, Okla.—Plans are being prepared by Harry Randall, Engineer, Campbell Bldg., Oklahoma City, for system of water works and electric lights; cost \$30,000.

Baker City, Ore.—Water Commission has recommended that city construct lower pipe line for a distance of 13.75 miles, to supply 6,500,000 gals. of water daily.

Gresham, Ore.—Citizens will vote Dec. 7 on \$20,000 bonds for water plant.

Gresham, Ore.—Town will issue \$20,000 bonds for water works plant and sewer system.

Hood River, Ore.—Citizens will vote Nov. 12 on issuing bonds for improvements, as follows: gravity water system, pipe line for which will be 5½ miles long, with stand-pipe, reservoir, distributing system, etc.; total cost \$90,000; the sewerage of the whole city not already so improved, the present systems contemplated to cost about \$12,000; one large district will probably require septic tanks for disposal of sewage; street improvements now ordered, macadamizing, grading, curbs, gutters, etc., at a cost of \$12,000 or more, with cement and wooden sidewalks in addition on many of the principal streets.

Newport, Ore.—City has decided to spend \$25,000 on construction of a water works system.

Lebanon, Pa.—Pennsylvania Chautauqua Board of Managers has taken steps to complete filter beds and place them into first-class condition.—A. D. Smith, Chairman of Committee.

Middletown, Pa.—Middletown and Swatara Consolidated Water Co., operating in the Boroughs of Middletown and Royalton, has received permission from State Commissioner of Health to install mechanical filtration plant; daily capacity of one million gallons.

Philadelphia, Pa.—Water Committee is considering ordinance providing for installation of meters.

Pittsburg, Pa.—Citizens have voted \$3,000,000 bonds for improving water systems.

Williamsport, Pa.—Plans are being made by Civil Engineers in employ of Philadelphia & Reading Railroad Company to build number of storage reservoirs along line of Catawissa branch between Catawissa and Lofty.

Lemmon, S. D.—Town will construct reservoir.

Lewisburg, Tenn.—City has purchased site on which springs are located to furnish water for municipal water works system; water supply will be increased.

Bartlett, Tex.—Citizens will vote \$8,000 bonds for elevated tank and tower at Water works.

Belton, Tex.—Council will advertise for bids for repairing damaged standpipe.

Marshall, Tex.—City Commission has ordered bids advertised for purchase of \$35,000 water works improvement bonds.

Wellington, Tex.—Wellington Water, Light & Ice Co. will install engine and

pump to supply water to 2,000 inhabitants.

Sugar House, Utah.—Water works system will be established in this city.

Strasburg, Va.—City has decided to improve water system.

Winchester, Va.—Acting on recommendations made by Engineer Hurlbut, of Southern Railway, Council of Strasburg has authorized Water Committee to make extensive improvements to present water system.

Rutland, Vt.—State Board of Health has urged city to take immediate steps to secure purer water supply.

Conconully, Wash.—Citizens have voted \$5,500 for construction of system of water works.

Renton, Wash.—Citizens will vote Dec. 7 on \$12,000 bonds to complete water system.

Tacoma, Wash.—Council has adopted resolution providing for construction of pipe line to Maplewood Springs and erection of pumping plant; cost \$150,000.

Tacoma, Wash.—Council has adopted ordinance for construction of 6-in. c. i. water main on North 8th and other streets in District No. 553.

Jeffersonville, W. Va.—Jeffersonville Water Co. has been incorporated.—W. H. Roberts, Middleway, and others, incorporators.

Cobalt, Ont., Can.—Ontario Railway and Municipal Board have approved by-laws under which Cobalt Township will spend \$75,000, and the town of Cobalt \$25,000 upon water works system.

Exeter, Ont., Can.—Council has adopted report and plans prepared by F. W. Farncomb, London, for system of water works, which for the present will be for fire service only; estimated cost \$25,000.

Montreal, Que., Can.—Plans are now being prepared for high pressure water system.—G. Janlu, Superintendent Water Works.

Ottawa, Ont., Can.—Tenders have been invited for supply of pipe 42 in. in diameter; cost about \$64,000.—N. J. Ker, City Engineer.

Port Colborne, Ont., Can.—Tenders have been invited for a pump with a capacity of 400 gallons per minute, in connection with water works extensions; tenders for 30-h.p. power electric motor are also wanted.

BIDS RECEIVED AND CONTRACTS AWARDED

Tempe, Ariz.—C. K. Scott, representing the American Light and Water Co., Phoenix, has signed contract with City Council to extend water mains; in all there will be nearly a mile of new pipes laid.

Weiser, Ida.—Weiser Land Co. has awarded contract for construction of dams, flumes, ditches and rock work for the reclamation project at Council to Slick Bros. for about \$300,000; contract calls for damming of middle fork of Weiser River about 8 miles from Council.

Rock Island, Ill.—Council, by a vote of 7 to 6, awarded building of 6,000,000-gal. filter plant at reservoir site to Pittsburg Filter Mfg. Co., as recommended by Consulting Engineer John W. Alvord and City Engineer Wallace Treichler.

Fort St. Philip, La.—General Contract Co., 323 Hennen Bldg., New Orleans, La., has contract for water works, tank, power house, concrete reservoir, pump house machinery, etc.

Hingham, Mass.—Following are the bids opened Oct. 5 by Bureau of Yards, Navy Department, Washington, D. C., for fresh water system at the U. S. Naval Magazine, Hingham, Mass.: Fred T. Ley & Co., 307 Main st., Springfield, \$11,000; McCay Engineering Co., 9 E. Lexington st., Baltimore, Md., \$7,736; Moore & Co., 12 Pemberton sq., Boston, \$12,237; C. M. Leach, P. O. Box 2285, Boston, \$10,573; Newport Contracting & Engineering Co., Inc., 2700 Washington ave., Newport News, Va., \$9,578; Dan Die Pietro & Co., 424 Hanover st., Boston, \$10,542; Peter F. Connolly, 70 Perkins st., Jamaica Plains, \$10,800.

Kansas City, Mo.—A contract for a new 25,000,000-gallon pump in the Quindaro pumping station was let to the Allis-Chalmers Co., Milwaukee, Wis., for \$21,636; the pump is to be set up by July 15, 1910.

Bellefonte, N. J.—Contracts for laying water mains on Greylock ave., North Cortlandt st., Malone ave. and Adelaide st., have been awarded by Township Committee. Contract for Greylock ave. job went to James T. Boylan, who bid \$1,309.11, while J. H. Sammis secured the contract for Cortlandt st. at \$429.28 and for Malone ave. and Adelaide st. at \$587.78.

Bloomfield, N. J.—Contract for furnishing 150,000 lbs. of pipe for Water Department has been awarded to R. D. Wood & Co., of Philadelphia, on their bid of \$23.90 a net ton.

Perth Amboy, N. J.—Mayor Bollschweiler has approved resolution which Water Board adopted Oct. 25, awarding contract

for new 12,000,000-gal. high duty pump to be installed at Runyon, to Wisconsin Engine Co. for \$32,225.

Newburgh, N. Y.—Board of Water Commissioners received bids, Nov. 1, for gate valves for water improvements at Washington Lake; all bids were rejected, as, through error, bids had been asked for valves instead of sluice gates; new bids will be asked.

Bids were as follows: A. P. Smith Manufacturing Co., Newark, N. J., three 30-in. valves \$425 each, and four 24-in. valves \$275 each; Ludlow Mfg. Co., Troy, three 30-in. valves, with a 25-lb. pressure, \$145.25 each, and with a 50-lb. pressure \$228 each; four 24-in. valves with a 25-lb. pressure \$88 each. The Rensselaer Mfg. Co., Troy, three 30-in. hub end valve at \$182 each and four 24-in. valves at \$87 each. The Coffin Valve Co., Boston, three 30-in. valves at \$225 each and four 24-in. valves at \$149 each. The Chapman Valve Mfg. Co., New York, three 30-in. iron body gate valves for \$343.20 and four 24-in. valves for \$201.30. The Eddy Valve Co., Waterford, four 24-in. gate valves with a 35-lb. test at \$100 each; with a 50-lb. test at \$110; with a 75-lb. test at \$120; three 30-in. valves with a 35-lb. test at \$160 each; with a 50-lb. test at \$175, and with a 75-lb. test at \$191.25.

New York, N. Y.—Bids were opened by Board of Water Supply, Oct. 27, for Contract 31, which calls for furnishing and installing four 48-in. controlling valves with expansion pieces, operating mechanism and appurtenances at the lower gate-chamber of Ashokan reservoir, near Brown's Station, in Ulster County, and the contract has been awarded to the Ogden Iron & Steel Mfg. Co., 147 Cedar st., for \$54,900.—J. W. Smith, Chief Engineer.

Wilmington, N. C.—Henry R. Worthington has been awarded a contract for furnishing a 4,000-gallon high-duty pump and engine for \$16,000. Other bids received were: Laidlow-Dunn-Gordon Co., \$11,300; Snow Steam Pump Co., \$16,200; Allis-Chalmers Co., \$14,115; Platt Iron Works Co., \$12,475; Eppinger-Carpenter Co., \$13,600; Hoover, Owens, Rentschler Co., \$15,800. Babcock & Wilcox Co. were awarded a contract for three 50-hp. boilers for \$6,695, 2 feed pumps \$360, open heater \$240, closed heater \$277; other bids for these items were: Whitted & White, Inc., (1) \$6,691; (2) \$209, (3) \$270; Warren Webster & Co.,

(3) \$210; Greensboro Boiler & Machine Co., (1) \$6,331, (2) \$325, (3) \$250, (4) \$300; Alexander & Garsed, (1) \$6,915; (2) \$240, (3) \$230, (4) \$350; E. Keeler Co., (1) \$6,516; Walsh & Widener Boiler Co., (1) \$6,500; J. S. Schofield Son Co., (1) \$8,400, (2) \$280, (3) \$260, (4) \$340.

Whitted & White, Inc., were awarded a contract for furnishing a 2,500,000 centrifugal pump for \$1,592. Buffalo Forge Co. bid for this item \$1,893.

Alexander & Garsted were awarded a contract for furnishing generator and engine, 16 hp., 10 kw., for \$77.50. Other bids were: Greensboro Boiler & Machine Co., \$839; Buffalo Forge Co., \$935.

R. D. Cole Mfg. Co. were awarded a contract for constructing a new 146,000-gallon tower 115 ft. high for \$7,290. Other bids were: Walsh & Widener Boiler Co., \$9,540; Des Bridge & Iron Co., \$7,350; Tipper & Wood, \$9,970; Petroleum Iron Works Co., \$8,700; Chicago Bridge & Iron Co., \$8,432; Davis Schofield Sons Co., \$7,520. An additional charge was made by the following companies for removing old standpipe, salvage included: Walsh & Widener Boiler Co., \$375; Petroleum Iron Works Co., \$720; Chicago Bridge & Iron Co., \$1,000; J. S. Schofield's Sons Co., \$760.—Hazlehurst and Anderson, Engineers, Atlanta, Ga., and Wilmington, N. C.

Reading, Pa.—Reserve pumping station will be erected at Hampden Reservoir, and Lawrence Machine Co., Philadelphia, bid \$9,445, and Fairbanks, Morse & Co., New York, \$8,750, to install the machinery.

Herrick, S. D.—Board of Trustees, Oct. 15, awarded contract to the Western Engineering Co., of Yankton, for the construction of a water works system here at \$9,890. Other bidders were: William Krotter, \$10,240; Des Moines Bridge & Iron Co., \$10,196; A. Beattie, \$9,960.

Cisco, Tex.—With Mayor Platt as Chairman, Council has closed a contract with the Fender Bros., of Kaufman, Tex., to put in a clarifying plant at Lake Bernie; work to be done at once.

Richmond, Va.—Committee on Water, Oct. 29, awarded contract for supplying 20-in. pipe to be run from the Marshall reservoir to the pumping mains of the electric plant, about 5,700 ft., to the Southern Railway Supply Co. for \$10,680.

Eagle River, Wis.—W. C. Fraser, Rochester, Minn., has secured contract for fur-

nishing material and laying about one mile of water main for \$9,500.

West Allis, Wis.—Contract for 10 miles of water main has been awarded to Advance Construction Co., Waukesha, at \$1.11 per ft.; total cost about \$58,000.

Port Arthur, Ont., Can.—M. J. Hogan has secured contract for pumping well 25-ft. diameter, and for laying 1,300 ft. of 20-in. steel pipe for \$7,300.—J. Antonison, City Engineer.

LIGHTING AND POWER

Kingman, Ariz.—Frisno Mines Power Company will install electric power plant on its property.

Nashville, Ark.—B. H. Rainwater, Junction City, has conferred with Council relative to installation of electric light plant.

Marysville, Cal.—Northern Electric Company will extend valley lines during the coming year; first extension will run from Marysville to Colusa.

Oakland, Cal.—Ordinance granting franchise to Great Western Power Company is to conduct business in this city in delivery of electricity for light, heat and power purposes, has been given final passage by Council.

Porterville, Cal.—H. H. Holley, of Visalia, is making preliminary survey for building plant on upper Tule River; it will develop 4,000 h.p.

Green Cove Springs, Fla.—Citizens have voted \$45,000 bonds for electric light plant, water works and sidewalks.

Dublin, Ga.—Council is considering installation of 500-h.p. boiler, engine and generator in electric light and water plant.

Byron, Ill.—Byron Water Power Co., of Byron, has been incorporated, to operate and maintain a dam across Rock River.—Geo. M. Clark and Geo. F. Bunn, Incorporators.

Elkhart, Ind.—Main st. will be illuminated by park light system; 47 three-light posts and 26 five-light posts will be installed.

Elwood, Ind.—Elwood Electric Light Company will extend its transmission lines to Frankton; distance four miles.

New Albany, Ind.—Board of Public Works has rejected bid of United Gas and Electric Company for contract for lighting streets for period of ten years from Sept. 1, 1910.

South Bend, Ind.—Council has passed ordinance requiring the Bell Telephone Company and allied companies to place wires underground.

Laurens, Ia.—Citizens are considering establishment of electric light plant.

Augusta, Kan.—Council is considering proposition submitted by S. J. Stafford for construction of electric light plant under terms of which city is to grant a 50-year franchise and assist in construction of dam across Walnut River.

Spearville, Kan.—Proposals will be received on electric light and power plant machinery and supplies.—Address Box 63.

Plaquemine, La.—Municipal electric light

Wilmington, N. C.—Bids received for Reconstruction of Distributing System.

	560.4 Tons 4"-6"	402.0 Tons 8"-10"	2,116.1 Tons 12"-24"	201.2 Tons Specials	Totals
<i>Furnishing C. I. Pipe:</i>					
U. S. Cast Iron Pipe and Fdy. Co.....	\$23.70	\$23.70	\$23.70	\$47.00	\$82,416.85*
Camden Iron Works.....	23.35	23.35	23.35	50.00	81,942.98
Lynchburg Foundry Co.....	24.95	24.75	24.50	50.00	85,835.93
Glamorgan Pipe and Foundry Co.....	24.45	24.45	24.45	49.00	85,128.13

* Note.—Contract awarded.

	24" Valves 4	20" Valves 1	16" Valves 11	12" Valves 22	10" Valves 8	8" Valves 15	6" Valves 85	4" Valves 30	Valve Boxes 160	Com- mon- Fire Hy- drants 50	Steam Fire Hy- drants 30	Steam Fire Hy- drant with 6" Valves and Boxes 50	Totals
<i>Valves, Hydrants, etc.:</i>													
Columbian Iron Works.....	\$155.00	\$120.00	\$45.55	\$26.50	\$21.20	\$14.50	\$9.30	\$5.70	\$1.80	\$19.10	\$21.10	\$31.40	\$6,618.65*
Glamorgan Pipe and Foundry Co.....	154.60	98.70	59.90	28.60	21.60	15.65	8.90	5.70	1.95	21.65	24.45	35.90	7,263.25
Eddy Valve Co.....	175.00	110.00	68.50	32.00	23.75	17.00	11.00	7.00	3.00	20.25	25.00	40.00	8,100.00
Crane Co.....	172.19	130.62	89.07	31.60	25.14	17.24	10.95	6.46					
The Fairbanks Co.....	176.00	124.85	59.12	26.90	20.46	10.91	7.70	5.30	2.42	19.80	21.80	33.80	6,933.00
Rensselaer Mfg. Co.....	141.75	96.45	61.65	24.75	19.80	13.50	8.65	5.30	2.50	19.45	21.45	33.60	6,837.25
Darling Pump and Mfg. Co.....	190.00	108.00	66.00	32.00	23.00	17.00	11.00	7.00	3.15	23.50	26.00	39.50	8,316.00
Ludlow Valve Mfg. Co.....	165.40	107.70	70.40	31.50	24.90	17.30	11.60	6.95	2.50	24.00	26.75	37.75	8,179.90
R. D. Wood and Co.....	145.00	95.00	60.00	30.00	21.00	16.50	11.00	6.75	2.75	26.00	28.50	37.00	7,993.00
Kennedy Valve Co.....	164.00	109.00	72.00	28.50	20.40	14.90	8.70	5.20	2.65	19.90	22.30	36.30	7,369.20

* Note.—Contract awarded.

	Unloading and De- livering Material, 3,560 Tons	Laying 24" Pipe, 3,350 Ft.	Laying 20" Pipe, 450 Ft.	Laying 16" Pipe, 13,220 Ft.	Laying 12" Pipe, 14,200 Ft.	Laying 10" Pipe, 7,500 Ft.	Laying 8" Pipe, 8,660 Ft.	Laying 6" Pipe, 34,670 Ft.	Laying 4" Pipe, 4,460 Ft.	Taking Up Pipe, 10" 1,750 Ft.	Taking Up Pipe, 8", 1,420 Ft.	Taking Up Pipe, 6", 4,780 Ft.	Taking Up Pipe, 4", 3,350 Ft.	Setting Hydrants, 130	Setting Geared Valves with Masonry Chambers, 16	Taking Up and Re- laving Pavement, 782 Sq. Yds.	Extra Excavation, 100 Cu. Yds.	Totals.
<i>Laying Pipe, etc.:</i>																		
J. Whitt Gurley and Co.....	\$0.50	\$0.90	\$0.60	\$0.44	\$0.29	\$0.22	\$0.18	\$0.13	\$0.11	\$0.37	\$0.23	\$0.18	\$0.11	\$3.00	\$30.00	\$0.15	\$1.00	\$26,540.60*
Guild and Co.....	.75	.66	.59	.42	.31 ³ ₄	.26	.21 ³ ₄	.16	.12	.27	.20	.15	.15	5.00	30.00	.80	.50	28,847.80
Walton and Wagner.....	.75	.76	.65	.45	.33	.27	.22	.16	.14	.50	.15	.12	.10	3.00	25.00	.15	.25	29,174.20
Harrison Construction Co.....	.80	.63	.59	.61	.40	.32	.25	.17	.15	.20	.16	.12	.10	3.50	25.00	.50	.50	32,877.90
I. T. McMahon.....	.75	1.27	.98	.71	.56	.45	.34	.26	.24	.26	.19	.12	.12	1.25	35.00	.20	.35	4,372.00
H. W. Bosler.....	.90	.75	.60	.50	.38	.30	.25	.20	.15	.10	.10	.10	.10	3.50	50.00	.75	.35	3,3017.00

* Note.—Contract awarded.

and water works plant has been destroyed by fire.

Kittery, Me.—The Kittery Electric Light and Water Co. has been incorporated by Horace Mitchell, city; John S. Whittaker, Portsmouth, N. H., and others for furnishing electricity for lighting streets of Kittery and Eliot, also to the inhabitants, and for commercial and manufacturing purposes; capital \$100,000.

Rowley, Mass.—Establishment of an electric lighting system in town is being considered.

West Boylston, Mass.—Town has voted to establish municipal electric lighting and power plant to furnish electricity for lighting streets and residences; cost of plant is estimated at \$15,000.

Worcester, Mass.—Worcester Electric Light Company has purchased site on Webster st. for erection of plant.

Saginaw, Mich.—Chippewa River Power Company has applied to Council for franchise to furnish electricity.

Aurora, Minn.—Village Council will purchase boiler to be used in connection with electric light plant.

Granite Falls, Minn.—Village is considering purchase of water wheel for power house.

Lindstrom, Minn.—Installation of electric light plant is being considered.

McKinley, Minn.—Citizens have voted \$5,000 bonds for construction of an electric light plant.

Harvard, Neb.—Harvard Electric Co. has petitioned State Railway Commission for permission to issue \$12,000 in stock to secure funds with which to construct electric lighting system.

Holdrege, Neb.—Council is considering extension of street lighting service in residential section.

Omaha, Neb.—Council will consider ordinance ordering telegraph, telephone and electric light companies to remove poles from sidewalk space along South 24th st. and to place wires under ground.

Reno, Nev.—Reno Power, Light and Water Company will construct \$1,000 plant on Truckee River in near future.

Aztec, N. M.—Aztec Light & Power Company will purchase equipment for power plant and electrical transmission.

Bay Shore, N. Y.—Board of Trade has adopted resolution favoring installation of municipal electric light plant and water works system.

Brooklyn, N. Y.—Kings County Electric Light and Power Company has filed with the Public Service Commission petition seeking approval of proposed issue of \$5,000,000 bonds; purpose of proposed issue is to pay for construction, completion, extension and improvement of its plant and distributing system, and for acquisition of property.

Sylvan Beach, N. Y.—Public Service Commission has authorized construction and operation of electric light plant in town of Vienna, to furnish electricity for municipal and other purposes.

Vestal, N. Y.—Vestal Lighting Company has been granted permission by the Public Service Commission to issue \$1,000 in capital stock; proceeds will be used for erection of transmission lines in this town.

Andrews, N. C.—Surveys have been made for construction of hydro-electric plant to develop 300 h.p. for transmission by electricity.—H. N. Wells, Mayor.

Durham, N. C.—Durham Traction Co. has decided to install additional machinery in plant, including 500-h.p. cross-compound Corliss engine, direct connected to three-phase 60-cycle 2,300-volt generator or 500 k.w. turbo-alternator.

Grand Forks, N. D.—Ways and Means Committee of Council has recommended election on \$141,000 bonds; \$25,000 will be used for increasing capacity of lighting plant.

Towner, N. D.—Estimate is being prepared by Engineer E. D. Jackson, St. Paul, of cost of installing electric light plant.

Amherst, O.—Council has decided to improve municipal electric light plant and install an all-night light service.

Dayton, O.—County Commissioners and County Infirmary Directors have approved new plans and specifications for heating plant at County Infirmary, and advertised for bids.

Lorain, O.—City has \$6,000 available for purchase of new engine, dynamo and switch boards for electric light plant.

Dougherty, Okla.—Arbuckle Water, Power & Electric Co. has been incorporated by W. T. Croslin, J. T. McCormick, Sulphur, and S. A. Newland, Ardmore; capital \$10,000.

Durant, Okla.—Citizens have voted \$20,000 bonds for installing electric light plant.

Duskin, Okla.—Names of contractors installing electric light plants are desired by Roy Alexander, Secretary M. O. & G. Immigration Co.

Oklahoma City, Okla.—Citizens have granted two 21-year franchises to Oklahoma Gas and Electric Company.

Wewoka, Okla.—Plans have been prepared by J. Harry Randall Co., Engineers, Oklahoma City, for electric light plant.

Eugene, Ore.—County Court has granted franchise to city for transmission line from hydro-electric power plant to city.

Reading, Pa.—Committee on Police has adopted specifications for lighting city for periods of one, three and five years.

Yendon, Pa.—Borough Council has ordered that all electric light and telephone wires be run under ground.

Providence, R. I.—Council has decided to substitute 27 magnetite lamps in place of 36 open arc lamps in business district.

Fort Pierre, S. D.—If a satisfactory offer is made, Council will grant franchise to install electric light system; if not, municipal system will be installed.

Greer, S. C.—City is considering two plans to secure electric lights; either contracting with Southern Power Co. of Charlotte, N. C., or erecting municipal plant.

Canadian, Tex.—Plans are being prepared for the construction of an electric light plant.—C. W. Conrad, Topeka, Kan., will have charge of construction.

Elgin, Tex.—Town is planning to install municipal electric light plant; however franchise would be given to any responsible company to install a plant.—W. H. Kennedy, Mayor.

Chehalis, Wash.—Council has passed two gas franchises, identical in terms; one is to interests represented by F. C. Brown and W. W. Seymour, of Tacoma, other to Mr. McArthur, of Tenino, and Herren & Rhodes, of Seattle; Mayor West has not acted on either of ordinances as yet.

Seattle, Wash.—Bids have been rejected for stringing wires for electric light extension in districts Nos. 1 to 6 were rejected.

Great Cacapon, W. Va.—Hydro-Electric Developing Company, incorporated with \$100,000 capital stock, has organized. William B. Osler, Great Cacapon, W. Va., is President; Morris A. Orndorff, Great Cacapon, Vice-President; Samuel R. Boyer, Steelton, Pa., Secretary, and Albert E. Holland, 1944 Harlem ave., Baltimore, Treasurer; company will erect water power-electric plant at Edes Fort on Great Cacapon River in Morgan County, West Virginia.

Racine, Wis.—Finance and Lighting Committee are discussing Mayor's communication relative to distribution of street lights throughout city and have practically decided that 16 new lights were needed.

London, Ont., Can.—Bids will be received also until Nov. 22 for transformers, motor generator set, voltage regulators, switchboard, lightning protectors, instruments, arc and incandescent street lighting systems and other electrical apparatus.—E. I. Sifton, Electrical Engineer.

Nanto, Alta., Can.—Citizens have passed by-law to appropriate \$16,000 for construction of electric light plant.

Ottawa, Can.—Canadian and American interests which are seeking authority to develop water power by damming the St. Lawrence River at Brockville are before Canadian Government again with revised plan; they propose to dam the whole river from Canadian and New York shores to drown out Long Sault Rapids and thereby raise river at this point about 13 in.; this would give several hundred thousand h.p.; movement has resulted in combination of St. Lawrence Power Company of Canada, and Long Sault Development Company of New York.

BIDS RECEIVED AND CONTRACTS AWARDED

Arkansas City, Ark.—Contract has been awarded by Land & Power Co., which owns and controls the Arkansas City Gas & Electric Co., at \$21,000 to the Allis-Chalmers Co., of Milwaukee, Wis.; contract calls for a new steam turbine and generator, also a separate generator, and two boilers and condenser.

Fresno, Cal.—San Joaquin Light & Power Co. has awarded contracts as follows: To the General Electric Co., of Schenectady, N. Y., for generators and transformers; to Pelton Water Wheel Co., of San Francisco, for 4,000 ft. pressure pipe line, and to Abner-Doble Co., of San Francisco, for water wheels.—J. G. White Co., of New York, N. Y., Designing and Supervising Engineers.

San Francisco, Cal.—Duncanson & Haroldson have secured contract to construct the sub-station for the Sierra & San Francisco Power Co. in Visitation Valley.

Hawkinsville, Ga.—City has opened bids for equipment for electric light plant, and awarded contract at \$970 to J. S. Schofield Sons Co., Macon, Ga., for high-pressure boiler developing 150 h.p.; at \$2,865 to Wisconsin Engine Co., Corliss, Wis., for Corliss engine with generator direct connected; at \$5,113 to Westinghouse Electric & Mfg. Co., 307 5th st., Pittsburg, Pa., for

generator, switchboard, arc and tungsten system; estimated total cost \$15,500.

Davenport, Ia.—Contract for the installation of the new lighting system in the one hundred block on East 3d st. between Brady and Perry has been awarded by Progressive Association of that block to Schmidt Electric Co. Davenport Foundry and Machine Co. received the contract for furnishing the posts.

Waterville, Me.—Committee on Public Buildings has awarded contract to the Waterville & Fairfield Railway & Lighting Co. to furnish electricity for lighting the city hall and armory.—B. F. Maxfield, Chief Engineer.

Boston, Mass.—Following are the bids opened Oct. 30 by Lieut.-Col. Edw. Burr, Corps Engineers U. S. A., for motor generator sets, motors, centrifugal pumps, transformers and lightning arresters: Ft. Wayne Electric Works, Ft. Wayne, Ind., \$10,257; General Electric Co., 84 State st., Boston, \$10,983; Wagner Electric Mfg. Co., St. Louis, Mo., \$10,968; Westinghouse Electric & Mfg. Co., Pittsburg, Pa., \$10,236; and Montgomery & Co., 105-107 Fulton st., New York, N. Y., bid on transformers only, \$2,297.

South Orange, N. J.—Authorization for execution of the long-delayed lighting contract with Public Service Corporation has been given to Chairman William H. Kemp by South Orange Township Committee. Contract had been held up for over a year by Committee, which stood out for provisions company did not seem willing to embody in the contract, but which it finally conceded. The most important concession is a clause regulating the price of private lighting in the township, so that residents cannot be charged a higher rate than is paid in other municipalities of the county.

Brooklyn, N. Y.—Following were bids received, Oct. 27, by Bird S. Coler, Borough President, for supplying all labor and materials of every kind and description and constructing the station building to be known as the power and gate houses and appurtenances complete for the Gowanus flushing tunnel, situated at Douglass st. and the head of the Gowanus Canal in the Borough of Brooklyn. Henry E. Fox, 81 East 125th st., New York, \$28,000; Snare & Triest, 143 Liberty st., New York, \$41,850; Daniel J. Ryan, \$34,299; George Hilderbrand, 38 Park Row, New York, \$39,440; T. J. Buckley Construction Co., \$42,365; United Plumbing & Construction Co., \$43,948.

Hamilton, O.—Board of Public Service received bids for furnishing 4,000 ft. of 12-in. O. D. plain end pipe running 31.32 lbs. per foot, for Dayton couplings, wrought screw end gas pipe, etc.; the bidders were the U. S. Cast Iron Pipe and Foundry Co., Chicago; Massillon Iron and Steel Co.; M. D. Larkin Supply Co., Dayton, O.; Sciota Valley Supply Co., Columbus, O., and the Crane-Hawley Co., Cincinnati. The bids were referred for tabulation.

Blackwell, Okla.—City has awarded contract to Lund & Canyon, city, for improvements to electric light system and extension of water works; will enlarge power house; will install 150 and 75-k.w. generators and Corliss engines and boilers; plans by Burns & McDonnell, Scarrit Bldg., Kansas City, Mo.

Philadelphia, Pa.—Edw. Fay & Son, 1521 Ranstead st., Philadelphia, have secured the contract for constructing power plant at Naval Home, Philadelphia, for \$12,952; bids opened Oct. 16 by the Bureau of Yards and Docks, Navy Department, Washington, D. C.

Ft. Douglas, Utah.—Bids were opened, Oct. 26, by Lieut. Kenneth P. Williams, Q. M., U. S. A., for constructing complete an electric light system at Ft. Douglas, and the following are the bids received: (a) wiring certain buildings and the furnishing and installing fixtures; (b) construction primary, secondary, service, transmission and street light lines, furnishing and installing cut-outs, lightning arresters, street lamps, brackets and transformers, in accordance with specifications; (c) furnishing and installing all apparatus and the furnishing of all watt-meters for buildings; (d) construction of a building for transformer substation; (e) total: F. E. Newberry Electric Co., St. Louis, Mo., (a) \$23,064 (b) \$12,790, (c) \$4,065, (d) \$3,500, (e) \$43,419; Meteor Electric Co., Salt Lake City, Utah, (a) \$9,418 (b), \$19,100, (c) \$4,630, (d) \$3,105, (e) \$36,254; Falkenau Electrical Construction Co., Chicago, Ill., (a) \$25,590, (b) \$12,290, (c) \$6,029, (d) \$4,559, (e) \$48,378; Salt Lake Electric Supply Co., Salt Lake City, Utah, (a) \$14,224, (b) \$11,749, (c) \$4,852, (d) \$2,950 (e) \$33,775.

Morrisville, Vt.—Citizens have voted to authorize the Water and Light Commissioners to award contract to Mount Mansfield Electric R. R. Co., of Stowe, Vt., to furnish energy to operate its railway, and to supply electricity to village of Stowe for lamps at \$30 per h.p. per year, with a minimum of \$2,500 per year.

Manitowoc, Wis.—Contracts have been awarded by Aluminum Foundry Co. for construction of a foundry and power house. Latter will be equipped with gas engines, pumps and compressor.

Toronto, Ont., Can.—Contracts have been awarded by the Hydroelectric Commission in connection with the transmission lines, transformer stations and all mechanical equipment as follows: To Royce, Ltd., of Manchester, England, for electric cranes for the transformer stations at Niagara Falls and Dundas; for electric cranes for the transformer stations at Toronto, London, Guelph, Preston, Berlin, Stratford, St. Mary's, Woodstock and St. Thomas, to Mussels, Ltd., of Montreal and Walkerville. Total amount of bids, \$17,094.

Verdun, Que., Can.—Contracts have been awarded by the municipality for equipment for the municipal electric light plant as follows: For two engines to Laurie & Lamb, Montreal, agents for Belliss & Morcom, Birmingham, England, at \$9,000; two 235-k.w., 3-phase, engine-type generators with direct-connected exciters and switchboards complete to the Canadian Westinghouse Co., at \$7,532.—Charles Brandeis, Montreal, Consulting Engineer.

FIRE EQUIPMENT

East Lake, Ala.—Citizens have voted \$8,000 bonds for erection of fire station.

Napa, Cal.—Council is considering purchase of automobile chemical for Fire Department.

Naugatuck, Conn.—Architect F. Alton Clark has completed plans for erection of two-story fire house.

Norton, Kan.—City will erect fire house for newly organized fire company.

New Orleans, La.—City is advertising for five up-to-date hose wagons.

Lutherville, Md.—Fire Department will be organized; combination hose and chemical wagon will be purchased.

Fall River, Mass.—Fire Commissioners have declared need of 250 ft. of new hose.

Hanover, Mass.—Town has organized volunteer fire company.

Haverhill, Mass.—Municipal Council and Fire Chief J. B. Gordon are considering advisability of purchasing automobiles for fire department use.

Leominster, Mass.—Town is considering establishment of flying squadron.

North Adams, Mass.—Town will purchase 500 ft. of hose and three nozzles.

Somerville, Mass.—Board of Aldermen has adopted order authorizing Mayor Woods to spend \$5,000 for chemical engine.

Wyoma, Mass.—Lake Shore Park Improvement Club will erect new fire engine house.

Grand Rapids, Mich.—City is considering purchase of auto chemical engine; chemical tank to be installed by department.

Kalamazoo, Mich.—Fire Commissioners Knight and Stearns have selected site at corner of West st. and Wheaton ave. for proposed fire station.

Port Huron, Mich.—Council has adopted resolution to advertise for bids for repairing 9th ward hose house.—R. D. O'Keefe, Superintendent of Public Works.

Pikesville, Mo.—Town is considering betterment of fire apparatus.

St. Louis, Mo.—City is considering installation of high pressure system.

Omaha, Neb.—Fire Chief Salter is considering request for automobiles for himself and assistants.

Atlantic City, N. J.—City has made appropriation to purchase automobile truck.

Elizabeth, N. J.—Fire Preventive Committee of Board of Fire Underwriters has recommended more hose and apparatus.

Glassboro, N. J.—Citizens have voted to build \$5,000 fire house.

Pennington, N. J.—Citizens have voted \$1,500 for new fire engine.

Plainfield, N. J.—City will improve fire alarm system; six-circuit switchboard with automatic controlling batteries will be installed; also six-circuit, automatic fire alarm repeater and necessary batteries, back supports and wiring; total cost \$2,735.

Albany, N. Y.—Council is considering ordinance authorizing erection of \$35,000 truck house.

Bellmore, L. I., N. Y.—Smithville South Hook, Ladder and Engine Company will purchase second-hand hook and ladder truck with complete equipment.—F. L. Hack, Foreman.

Brooklyn, N. Y.—Architect H. W. Billard has prepared plans for erection of \$36,000 engine house.

Flatbush, L. I., N. Y.—Committee on Health, Fire and Police of Flatbush Board of Trade are considering site for erection of engine house.

Greenlawn, L. I., N. Y.—Fire apparatus and truck house has been destroyed by fire; plans are being considered for new house and apparatus.

Rockaway, N. Y.—Council has decided to

erect a firemen's and municipal building; cost \$7,500.

Van Wert, O.—Council has decided to provide better fire protection.

Oklahoma, Okla.—Architect D. A. Bennett has prepared plans for four fire stations.

Tulsa, Okla.—Architects Mathews & Cross have prepared plans for erection of two-story fire station.

Chester, Pa.—Citizens will vote in February on \$600,000 loan bill; \$15,000 is provided for installation of complete fire alarm system.

Lancaster, Pa.—Fire Committee is investigating advisability of spending \$25,000 for chemical fire engines.

Lincoln, R. I.—Taxpayers of Prospect Hill Fire District are considering erection of fire hall.

Bruce, S. D.—Town Trustees will purchase 500 ft. of hose.

Dallas, Tex.—Board of Municipal Commissioners has decided to purchase \$7,500 auto fire engine.—E. A. Lott, Chief Mechanist.

Seattle, Wash.—Fire and Water Committee has authorized remodeling of aerial truck of fire department by placing equipment on automobile of 90 h.p.; cost \$6,300.

Tacoma, Wash.—Councilman Giblett has introduced resolution providing for purchase of supplies for fire department which he said should be bought now so they may be received in time for use next year; in list was included two steam fire engines, one auto hose wagon and one horse-drawn hose wagon.

Newell, W. Va.—Volunteer firemen will install electric fire alarm system.

Karnloops, B. C., Can.—Town will install fire alarm system; cost \$4,500.

Winnipeg, Man., Can.—City has selected sites at Fort Rouge and in North Winnipeg for erection of fire houses.

BIDS RECEIVED AND CONTRACTS AWARDED

Napa, Cal.—Four local firms submitted bids for furnishing the local Fire Department with 500 ft. of hose, the figures ranging from 70c. to 95c. a foot, and the contract went to the H. Schwarz Co., representing the Gutta-Percha and Manufacturing Co., which bid 80c. a ft. for the "Underwriter's" brand.

Mansfield, O.—Local Board of Public Safety, consisting of Charles W. Mitchell and J. D. Bell, has opened bids and awarded contract for erection of new fire station in the manufacturing district to be known as fire station No. 4 to Jacob Wolf for \$3,498, which was the lowest bid submitted for the job. Other bids were as follows: John Huess, \$3,898.64, and H. A. Booth, \$4,172.93.

Hazleton, Pa.—Court has been asked to grant writ of alternative mandamus to compel Mayor Fred L. Smith to sign contract for purchase of a combination chemical engine and hose wagon from the Robison Fire Apparatus Mfg. Co., for \$5,000, in accordance with action taken by City Councils.

ELECTRIC RAILWAYS

Helena, Ark.—Interurban Railway Co. has been incorporated to construct electric railway; capital \$10,000.—E. C. Hornor, John S. Hornor and C. H. Purvis, Incorporators.

Boise, Ida.—Dean Perkins has petitioned for franchise to build electric line between this city and Kuna.

Chicago, Ill.—North Chicago Railways has applied for charter as successor of the Chicago Consolidated Traction Company, to be taken over on terms arranged by Reorganization Committee.

Peoria, Ill.—Council has passed Peoria and Galesburg Interurban franchise, with amendment requiring that company to pay to city 5c. per car in and 5c. per car out of city.

Monticello, Ind.—Town Board has granted Northwestern Indiana Traction Company a 75-year franchise to construct an electric railway entire length of Main and Marion sts.

Granville, Ia.—Sioux City & Spirit Lake Railway Co., of Sioux City, has secured franchise to construct electric railway in Granville Township.

Saginaw, Mich.—Saginaw & Flint Railway Co. will lengthen its Frankenthurp spur to Cass City, taking in both Caro and Vassar.

Breckenridge, Minn.—Wahpeton & Breckenridge Street Railway Co. has been incorporated to build electric railway to connect Breckenridge and Wahpeton, N. D.; capital stock \$50,000.—D. J. Jones, Secretary; Joseph Gunn, of Breckenridge, and F. L. Strum, Incorporators.

Virginia, Minn.—W. M. Prindle, Duluth, and W. D. Chapman, Chicago, have ap-

plied to Council for franchise for electric line to be built to Gilbert and Eveleth.

Winona, Minn.—La Crosse & Winona Traction Co. has petitioned Council for 50-year franchise to build and operate electric railway to La Crosse, via Galesville.

Yazoo City, Miss.—Municipal Street Railway Co. will soon let contract for constructing connecting switch or "Y" branch to its electric railway.

Camden, N. J.—Business Improvement Association is urging construction of trolley line to have ferry connections and tap commercial centers.

Jamestown, N. Y.—Warren-Jamestown Street Railway Company is considering extension of line to Dunkirk via Stockton.

New York, N. Y.—Public Service Commission has adopted order requiring New York & Queens County Railway Co. to double track its line between Flushing.

Syracuse, N. Y.—Syracuse, Lake Shore & Northern Railroad Company will soon award contracts for construction of proposed extension between Fulton and Syracuse.

Asheville, N. C.—E. W. Grove will build incline or counterweight railway from terminus of the Charlotte street car line to top of Sunset Mountain; cost about \$30,000.

Jamestown, N. D.—The Jamestown Traction Co. will build line to connect Jamestown, Fried, Spiritwood and Courtenay; capital \$150,000.—J. J. Nierling, President; Morris Beck, Vice-President; L. B. Niemeyer, Secretary, and F. A. Lenz, Treasurer.

Medford, Ore.—President John R. Allen, of the Pacific and Eastern Railroad, has asked John F. Stevens to advise him concerning his proposed electric railway system in Rogue River Valley; Allen will apply for franchise in this city for electric railroad; application for franchise will be made simultaneously in the other cities of valley from Grants Pass to Ashland; company has already been incorporated for purpose, and is known as Southern Oregon Railways.

Ontario, Ore.—D. G. Sutherland, Ontario, has applied to Council for franchise to construct electric railway.

Aberdeen, S. D.—Aberdeen Railway Co. is taking estimates of cost of constructing street car line; four miles are to be completed by Dec. 1, 1910.

Chattanooga, Tenn.—Council has granted D. J. Duncan franchise to construct electric railway.

Memphis, Tenn.—Memphis Traction Company has been incorporated to build line from this city to Nashville; capital \$50,000.—Consulting Engineer G. E. Bushnell, Indianapolis, Ind., is interested.

Ogden, Utah.—Ogden Rapid Transit Company is considering extension of line to Brigham City.

Tacoma, Wash.—Puget Sound Electric Railway Company will apply for short line franchise direct to State Railroad Commission.

Tacoma, Wash.—J. W. Diefendorf is interested in project of constructing electric line to Mount Rainier via Spanaway and Obup Lakes.

Bluefield, W. Va.—Within short time work will be started on new traction line between Ronceverte and Rich Creek, Va.; distance 50 miles; new line is being promoted by B. F. Mann.

Wheeling, W. Va.—Board of County Commissioners has passed franchise ordinance granting Pan Handle Traction Company right to double track its line from Wheeling to Glennora.

Edmonton, Alta., Can.—Edmonton Radial Railway Company will place contracts within the next six months for constructing 10 miles of single and double track.

Hartland, N. B., Can.—John E. Stewart and Hon. A. B. Donworth are interested in plan to build electric railway from this city to Foreston.

London, Ont., Can.—London Stock Company has purchased Southwestern Traction Company, which they will extend as far as Aylmer and Delaware.

BIDS RECEIVED AND CONTRACTS AWARDED

Brooklyn, N. Y.—Board of Estimate and Apportionment of New York City, Oct. 29, authorized bond issue necessary to begin work on the 4th ave subway of Brooklyn; bids for this work were opened May 8, 1908, and contracts at that time were awarded as follows. Contract No. 1, extending from Nassau st. to Willoughby st., to Jas. P. Graham, Bensonhurst, railroad work, \$1,020,477, and pipe galleries, \$101,375. Contract No. 2, extending from Willoughby st. to Ashland place, to Wm. Bradley, 63th st. and North River, New York City, railroad work, \$3,436,019; pipe galleries, \$58,695; total, \$3,494,714. Contract No. 3, extending from Ashland place to Sackett st., Wm. Bradley, railroad work, \$3,392,091; pipe galleries, \$208,135; total, \$3,600,226.

Contract No. 4, extending from Sackett st. to 10th st., E. E. Smith Contracting Co., 215 W. 125th st., New York City, railroad work, \$2,283,553.30; pipe galleries, \$206,672; total, \$2,490,225.30. Contract No. 5, extending from 10th st. to 27th st., The Tide Water Building Co., 25 W. 26th st., New York City, and Thos. E. Bryson, 60 Wall st., New York City, railroad work, \$1,945,640; pipe galleries, \$251,076; total, \$2,196,716.50. Contract No. 6, extending from 27th st. to 43d st., E. E. Smith Contracting Co., railroad work, \$2,808,983; pipe galleries, \$1,000,665; total, \$3,809,648.

Rensselaer, N. Y.—The Albany Southern R. R. Co. has awarded contract for grading in connection with the double tracking of its railway from Rensselaer to Electric Park, a distance of 14 miles, to the Ennore & Hamilton Construction Co.—J. C. White & Co., New York, will have charge of work.

White Plains, N. Y.—New York, Westchester & Boston Railway Co. has awarded contracts to Ferguson Construction Co., 37 Wall st., New York City, and to Henry Steers, 17 Battery pl., New York City, for the construction of a branch line from Mount Vernon to White Plains; distance 10 miles.

Lynchburg, Va.—The People's Improvement Co. has closed a contract with the Lynchburg Traction & Light Co. to build extension of about one mile to Fairview Heights.

BRIDGES

Birmingham, Ala.—St. Louis & San Francisco Railroad, Illinois Central Railroad and Birmingham Belt Railroad are considering construction of viaduct at 12th st.

Portland, Ark.—Ashley County will construct bridge across Bayou Bartholomew.

Van Buren, Ark.—St. Louis & San Francisco Railroad will rebuild bridge across Arkansas River.—M. C. Byers, St. Louis, Mo., Chief Engineer.

Eureka, Cal.—Bids will be received in February for construction of steel highway bridge; cost about \$110,000.—G. W. Connors, County Engineer.

Fresno, Cal.—Four sets of plans have been prepared for construction of bridge over Dry Creek Canal; cost \$20,000.

Wilmington, Del.—Residents of Henry Clay Factory are considering construction of new bridge over the Brandywine.

Fairburn, Ga.—Campbell County Commissioners will soon award contract for construction of bridge near Mallory's Crossing, in Red Oak District.—L. W. Roberts, Atlanta, Engineer.

Caldwell, Ida.—Citizens will vote on \$50,000 bonds for building two bridges and enlarging city jail.

Clinton, Ill.—Council has decided to call election on \$20,000 bridge bonds.

Fisher, Ill.—Construction of bridge over Sangamon at Newcomb Ford is being considered.

Mt. Pleasant, Ia.—County Supervisors have decided to erect bridge over Skunk Creek.

Girard, Kan.—County Commissioners will construct wagon bridge over river in eastern part of Croweburg.

Wichita, Kan.—Plans and estimates have been prepared for construction of bridge across Little River at 11th st.

Baltimore, Md.—Board of Estimates has allowed Park Board an appropriation of \$50,000 for construction of bridge over Stony Run.

Baltimore, Md.—City Engineer Benj. T. Fendall has completed plans for a reinforced concrete bridge on Franklin road; cost \$20,000.

Athol, Mass.—Town will again consider erection of bridge across Miller's River on Exchange st.

Detroit, Mich.—E. W. Voigt, 203 Grand River ave., is considering erection of bridge to cross the Detroit River, connecting the city with Grosse Isle; estimated cost, \$250,000.

Gladwin, Mich.—County Supervisors have appropriation available for construction of bridge across Tittabawassee on Wells rd.

Ionla, Mich.—Board of Supervisors has voted \$9,000 for construction of bridge across the Grand River in Danby Township.

Marquette, Mich.—County Board Commissioners have appropriated \$2,500 for to pay part of cost of bridge across Michigamme River.

Saginaw West Side, Mich.—County Supervisors will construct bridge across the Tittabawassee River; cost \$30,000.

Golden City, Mo.—Oklahoma & Golden City Railroad Co. will construct five large bridges and a number of small bridges.—J. A. Griesel, General Manager.

St. Louis, Mo.—Board of Public Improvements will soon award contracts for superstructure of three main spans of municipal bridge across Mississippi River; cost \$1,000,000.—Boller & Hodge, St. Louis, Consulting Engineers; Maxime Reber, President.

St. Louis, Mo.—City will construct 60-ft. viaduct over Compton ave.; plan is being considered for viaduct 1,308 ft. long and 60 ft. wide over Ewing ave.; cost \$240,000.

Warrensburg, Mo.—County Court will construct 27 new steel bridges; contracts for the structures will be let this month.

Woodbury, N. J.—Government has approved Road Supervisor Cattell's plans for new bridge over Woodbury Creek on Crown Point road.

Albion, N. Y.—State Canal Board has decided to construct lift bridge at Eagle Harbor; cost \$35,000.—T. W. Barrally, Division Engineer of State Engineer and Surveyors Department.

Rome, N. Y.—Bids will be advertised for construction of East Bloomfield st. bridge.—J. L. Plunkett, City Engineer.

Rye, N. Y.—All bids opened Oct. 20 for constructing bridge, with retaining walls and abutments filling in the roadway and macadamizing Highland rd., have been rejected; no date set for receiving of new bids.—G. L. Henderson, Village Clerk.

Syracuse, N. Y.—Surveys are being prepared by State Engineer F. M. Williams, Albany, for construction of Franklin st. bridge.

Chillicothe, O.—Plans are being prepared by County Engineer A. M. Anderson for about 20 to 30 12-ft. span reinforced concrete arches and culverts for Ross county.—R. D. Alexander, County Auditor.

Cleveland, O.—Erie R. R. has submitted plans to Chamber of Commerce for construction of rolling lift bridge; cost \$200,000.

Hamilton, O.—Board of Commissioners, Butler County, is considering construction of 175-ft. span steel bridge, with reinforced concrete abutments, in Oxford Township.—J. A. Dillon, County Engineer.

Lorain, O.—Construction of bridge at 31st st. is being considered.

Bristow, Okla.—Creek County has voted \$200,000 bonds to build 69 bridges.

Lawton, Okla.—Lawton & Fort Sill Electric Railway Co. will construct 50-ft. bridge over Medicine Creek.

Portland, Ore.—Councilman Bidding will introduce resolution providing for steel bridge across Marquam Gulch; cost about \$50,000.

Lilly, Pa.—Plans are being prepared by Engineers Henry & Dillman, Altoona Trust Bldg., Altoona, for three 200-ft. span steel bridges, with reinforced concrete piers and abutments, for the Pennsylvania R. R. and Borough.

Pittsburg, Pa.—Citizens have voted \$850,000 bonds for building bridges over Sylvan ave and Hights run and for other improvements.

Knoxville, Tenn.—Plans drawn by W. B. Crenshaw for Asylum ave. concrete viaduct have been accepted.

Kelty, Tex.—Angelina County Lumber Co. will construct wooden trestle across Angelina River.

Waco, Tex.—Citizens' Street Railway Co. has decided to construct steel bridge.—H. C. Scott, St. Louis, Mo., President.

Weatherford, Tex.—City has authorized Bridge Committee to secure plans and receive bids for construction of proposed Elm st. bridge.

Big Stone Gap, Va.—City will build steel or iron bridge about 70 ft. in length.—Horace E. Fox, Engineer.

Castle Rock, Wash.—Cowlitz County Commissioners have decided to erect a steel bridge over Cowlitz River; cost \$35,000.

Seattle, Wash.—Seattle Electric Company will pay \$3,749.16 toward construction of steel bridge over 4th ave. at Yesler way; total cost \$20,000.

Tacoma, Wash.—Council has adopted resolution instructing Commissioner of Public Works to construct joint bridge from street railway traffic and highway travel on Puyallup ave.

Tumwater, Wash.—Council is considering erection of steel bridge over Des Chutes River; cost \$5,000.

Calgary, Alta., Can.—Ratepayers have passed Langevin bridge by-law for a 30-ft. bridge over Bow River at 4th st. east.

BIDS RECEIVED AND CONTRACTS AWARDED

Gadsden, Ala.—W. A. Ferret, Birmingham, has been awarded contract for bridge across Village Creek.

San Jose, Cal.—The following bids for the Bear Creek road bridge were submitted: W. L. Gillham, \$1,688; John W. Williams, \$1,300; John Doyle, \$1,555. All bids referred to Supervisor Mitchell. For the Portland ave. bridge the following bids were submitted: John Doyle, \$822; John Williams, \$1,200; L. M. Scott, \$1,200; James Casley, \$842. Bids were referred to Supervisor Mitchell.

The following bids for the Downer ave. bridge were received by the board: John Doyle, \$1,643; John W. Williams, \$1,463.50; L. M. Scott, \$1,492; John F. Adams, \$1,585;

Jorguson Bros., \$3,175; C. A. Thomas, \$1,700; James Casley, \$1,616. The bids were referred to Supervisor Roll.

Leavenworth, Kan.—County Commissioners have let contracts for constructing concrete culvert and for repairing Bridge No. 60, Bridge No. 205 and Bridge No. 257. Contract for building culvert was given to the Leavenworth Bridge Co., and the contract for repairing the three bridges to J. T. Mottin. The bids follow: Leavenworth Bridge Co., for constructing concrete culvert, \$450; for repairing Bridge No. 205, \$275; for repairing Bridge No. 275, \$257. Missouri Valley Bridge Co., for constructing culvert, \$474. J. B. Tierney, for constructing culvert, \$465. T. T. Mottin, for repairing Bridge No. 60, \$235; for repairing Bridge No. 205, \$264; for repairing Bridge No. 275, \$243. A. Slumski, for building culvert, \$490. No bids for repairing Bridge No. 292 were handed in.

New Duluth, Minn.—Minnesota Steel Co., subsidiary of the U. S. Steel Corporation, has awarded contract for constructing steel bridge across the St. Louis River near New Duluth to American Bridge Co.

Bellwood, Neb.—Standard Bridge Co., Omaha, has been awarded contract for building new bridge over the Platte River.

Brooklyn, N. Y.—Bids were opened Oct. 28 by Park Board, New York City, for furnishing material and erecting a bridge at Shore rd. and 1st ave., Brooklyn Borough, as follows: Booth Bros. & Hurricane Isle Granite Co., 208 Broadway, New York City, \$122,500; Herbert L. Brown Co., 225 5th ave., New York City, \$89,800; Luke A. Burke & Sons Co., 25 W. 42d st., New York City, \$107,750; Cooper & Evans Co., 220 Broadway, New York City, \$126,126; Godwin Construction Co., 30 Church st., New York City, \$129,994; Leo E. Kelly, 651 Belmont ave., Brooklyn, \$136,000; McHarg-Barton Co., 165 Broadway, New York City, \$126,000; Northeastern Construction Co., 225 5th ave., New York City, \$112,674; Rodgers & Hagerty, Inc., 41 Park Row, New York City, \$132,459; Daniel J. Ryan, 723 3d ave., Brooklyn, \$118,919; Ryan-Parker Construction Co., 13 Park Row, New York City, \$123,000; Louis Wechsler, 1133 Broadway, New York City, \$119,350.

Catskill, N. Y.—Contract for constructing a concrete bridge over Vosenkill at Main st. has been awarded to Union Bridge Construction Co. for \$4,954.

New York, N. Y.—Snare & Triest Co., 143 Liberty st., has been awarded contract, at \$43,570, for constructing a steel viaduct at St. George, Staten Island, by The Department of Docks.

Sullivan, N. Y.—Contract for furnishing material and erecting a steel riveted truss bridge, with concrete and macadam floor system, bids opened Oct. 30, has been awarded to Climax Road Machine Co. for \$6,900.—Ford Allen, Chittenango, Town Superintendent.

Bucyrus, O.—County Commissioners received bids Oct. 30 on several proposed improvements and a contract was awarded for excavation at the Albright channel, involving moving 3,855 yds. of dirt. L. R. McMichael and David Shumaker were the bidders, the latter securing the contract for \$722.82. For completing Lane st. bridge Modern Construction Co. bid \$2,462 on superstructure and Gus Helmbold \$2,129.73 on substructure. On the Kleinknecht bridge there were three bids, ranging from \$2,087 to \$3,100, and on the Albright bridge three bids ranged from \$2,592 to \$3,870. None of the bridge contracts were awarded.

Dayton, O.—Contract for building approaches to Needmore bridge has been awarded to Frank Tejan by County Commissioners. Tejan is to place soil at 39c. per yd. and sand at 49c. per yd.

Pittsburg, Pa.—Following contracts have been let by County for rripping and repairs to bridges: J. C. Marshall, Harnarville, Pa., for repairs to bridge No. 6, Deer Creek; Daniel Stratton, McKeesport, Pa., for rripping at Bridge No. 1, Piney Fork; William Malenfont, Hillsborough st., Pittsburg, for repairs to bridge No. 1, Piney Creek; bridge No. 5, Montout Run; bridge No. 3, Days Run, and bridges Nos. 2, 7, 11, 14, 16, 17, 19 and 21, Piney Creek.

Floyd, Va.—Roanoke Bridge Co., Roanoke, October 27, submitted the lowest bid for the construction of steel bridge over Little River between Floyd and Montgomery counties to State Highway Commission.

Richmond, Va.—Richmond & Henrico Railway Co. awarded contract to Blake Construction Co., of New York, to construct viaduct between College and 21st and Marshall sts.; will be one-half mile long and 42 ft. wide; cost about \$300,000. Blake company will submit contract to Winston & Co. and W. O. Burton, both of Wheeling.

Benwood, W. Va.—Pennsylvania Steel Co., Stephen Girard Bldg., Philadelphia, Pa., has submitted the lowest bid for construction of a 3,000-ton bridge over the Ohio River between Bellaire, O., and Benwood.

MISCELLANEOUS

Long Beach, Cal.—Board of Public Works is considering strengthening of municipal pier, to include the construction of rock breakwater; cost \$75,000.—C. H. Windham, Mayor.

Napa, Cal.—Health Officer F. R. Stacker is gathering data relative to cost of constructing garbage incinerator.

San Francisco, Cal.—Site on 6th ave. has been selected for proposed Richmond police station.

San Francisco, Cal.—Board of Public Works has adopted resolution asking Board of Supervisors to set apart \$2,000 for preparation of plans for new police stations.

Santa Monica, Cal.—Thos. J. Hampton and W. H. Bainbridge are considering construction of breakwater, bulkhead and four jetties in Santa Monica Bay.

Bloomington, Ill.—City has awarded \$50,000 improvement bonds to N. W. Halsey & Co. at \$99.15.

Rensselaer, Ind.—Channel of Kankakee River will be straightened and improved at cost of \$250,000.—H. L. Gamble, Engineer.

Winchester, Ky.—Citizens have voted \$40,000 bonds for erection of city building.

Baltimore, Md.—Citizens have voted \$1,000,000 bonds to supply additional means for construction and completion of docks and piers.

Brookline, Mass.—City will purchase site at St. Paul and Still sts. for establishment of playgrounds.

Fall River, Mass.—Park Commissioners are considering purchase of playground site in eastern section of city.

Melrose, Mass.—Aldermen have voted to borrow \$36,000 for the purchase of Dix pond area north of City Hall with buildings, to be used as a playground and also as site of a soldiers' monument; Soldiers' Monument Association has agreed to raise \$22,000 for erection of monument and for beautifying grounds.

Omaha, Neb.—Street Commissioner Flynn is urging better equipment for his department.

Omaha, Neb.—Board of Park Commissioners will be urged to condemn tract of about 24 lots between 27th and 28th sts. and convert it into park and playground for children of that section of city.

Pateron, N. J.—Freeholder Myron Robinson, Chairman of Committee appointed to look into advisability of erecting isolation hospital, has recommended that plans be authorized; cost about \$30,000.

Ventnor, N. J.—Council will appropriate \$15,000 toward securing control of beach front outside Boardwalk for city park.

Hempstead, L. I., N. Y.—Taxpayers have voted to sell 1,040 acres of land under water at Long Beach for summer resort purposes.

Jamestown, N. Y.—Hospital Commission has rejected all bids for \$50,000 bonds.

New York, N. Y.—Bids will be received by Board of Health Nov. 11 for furnishing material and removing night soil, offal and dead animals from city of New York, all boroughs, during the years 1910, 1911, 1912 and 1913 and 1914, contract to be awarded as a

whole, or by each Borough separately, as Board may decide is for the best interests of the city.—Dr. Thos. Darlington, President.

Rochester, N. Y.—Board of Supervisors has appropriated \$75,000 for tuberculosis hospital site and building.

Watertown, N. Y.—Mayor Hugo has called Council's attention to need of street signs.

Cincinnati, O.—Comprehensive plans for construction of a subway to connect business quarter with outlying parts of Cincinnati will be presented to Council; expenditure of about \$15,000,000 would be involved in project, which contemplates municipal ownership of proposed subway and urban and interurban traction terminals.

Cleveland, O.—Steps now being taken by city will result in doubling width of river channel from mouth of stream at Lake Erie to point where old river bed meets main channel.

Dayton, O.—Winchett Fertilizer Company is urging need of purchase of 25 more garbage wagons.

Oklahoma City, Okla.—Ground has been purchased southeast of town to be used as site for detention hospital; cost \$25,000.

Portland, Ore.—Mayor Simon has been asked by Special Committee of Chamber of Commerce to condemn site for public dock; \$500,000 is available.

Altoona, Pa.—Ex-Water Commissioner S. M. Griffith, John A. Fox and others are interested in movement to convert old Altoona reservoir into park.

Chester, Pa.—Citizens will vote in February on \$600,000 loan bill; \$30,000 is provided for rebuilding and building wharf and piers of city.

Pittsburg, Pa.—Citizens have voted \$100,000 bonds for rubbish disposal plant.

Pittsburg, Pa.—Citizens have voted \$500,000 bonds for new playgrounds and \$200,000 bonds for placing ball grounds, etc., in them; also \$250,000 for tuberculosis hospital.

Scranton, Pa.—Superintendent Day will purchase motor cycle for police department.

Providence, R. I.—Citizens have voted to direct General Assembly to issue \$500,000 for acquirement and improvement of shore property in this city, Pawtucket and East Providence.

Anderson, S. C.—J. H. Casey has prepared plans for erection of \$40,000 addition to hospital building.

Norfolk, Va.—Advising prompt equipment of Jackson Park as a public place of recreation, Board of Control has asked Councils for appropriation of \$4,000 for this purpose.

Seattle, Wash.—Finance Committee has authorized construction of city stables at Lake Union; cost \$15,000.—R. H. Thomson, City Engineer.

Montreal, Que., Can.—Public competition is open between the Architects, Surveyors, Engineers, Draughtsmen of city for one or more schemes of improvements to St. Helen's Island, and the conversion thereof into a public amusement park; cost not to exceed \$150,000.—L. O. David, City Clerk.

Owen Sound, Ont., Can.—Plans and estimates for new dry dock have been prepared by R. MacDowall, Town Engineer; cost \$225,000.

Saskatoon, Sask., Can.—Bids received Oct. 6 for construction of subway under tracks of the Canadian Northern Railway have been returned unopened.—G. T. Clark, City Engineer.

BIDS RECEIVED AND CONTRACTS AWARDED

Los Angeles, Cal.—Contract for erecting a rock crushing plant (bids opened Oct. 18) has been awarded to Henshaw, Buckley & Co., of San Francisco, for \$25,500.—A. M. McPherson, Deputy County Clerk.

New York, N. Y.—Following bids were received on October 26 by the Department of Corrections for furnishing all the labor and materials required for construction and completion of a 72-ft. single screw steamer: Waters, Gildersleeve Colver Co., 45 Broadway, New York, \$21,950; Columbia Engineering Works, \$25,000; John F. Walsh, Jr., Co., 127 Charlton st., New York, \$23,739; James Schewan & Son, \$22,741. All bids have been rejected.

Philadelphia, Pa.—Bids for alterations and extensions to the Philadelphia Hospital, to cost about \$100,000, were received Nov. 2 by Director Neff, of the Department of Health and Charities; work will consist of an addition to the power plant and the installation of boilers and hot-water generators, boiler and equipment in laundry, corridor bridges between wards, four additional pavilions for female insane patients, addition to nurses' building, furnishing and installing incinerating plant and erection of building for same. Philip H. Johnson has prepared the plans for improvement.

The bids will have to be scheduled before awards are made. The bidders are: John Wanamaker, Lit Brothers, Snellenburg & Co., Babcock & Wilcox, Sax & Abbott, Edward R. Fay, American Laundry & Machine Company, Bernstein Manufacturing Company, John R. Wiggins Company, Mitchell & Bros., and the Howard W. Read Company.

South Bethlehem, Pa.—Chairman Rankey of the Street Committee submitted the following bids for street signs to Borough Council: H. Clay Tacy, Bethlehem, 500 enameled iron signs, \$172.50; American Sign Co., Clyde, O., enameled iron signs, 40c. each; J. E. Scott, Detroit, aluminum signs, 35c. each, in 500 lots; Standard Sign Mfg. Co., Pittsburg, iron enameled signs; 25c., 30c. and 40c., in 500 lots, \$1.20 for four-way on corner signs, erected on standard set in concrete; C. H. McCloskey, South Bethlehem, enameled iron signs, guaranteed for five years, 40c. each, 50c. each erected, lots of 500 or more; Robert Bros., Easton, aluminum or enameled iron signs, 27c., 30c., brass 37½c. and 50c. each and erecting cost 5c. each; the bids were referred to the Street Committee.

Moncton, N. B., Can.—Contract for the extension to Moncton wharf has been awarded to Oscar and Warren Downey, Curreyville.

TOO LATE FOR CLASSIFICATION

STREET IMPROVEMENTS

Jacksonville, Fla.—City is considering widening of Plum st.; widening of West Ashley st. is being urged.

Jacksonville, Fla.—Bids for \$250,000 Duval County road improvement bonds will be opened Nov. 29, noon.

Pensacola, Fla.—Board of Public Works is considering purchase of rotary rock crusher and 7-ton road roller.

Jackson, Ga.—County will vote Dec. 11 on \$20,000 bonds for road improvements.

Rock Island, Ill.—Board of Local Improvements is considering paving of 2d, 3d and other streets with asphalt.

Hutchinson, Kan.—City will lay considerable amount of cement walks.

Baltimore, Md.—City Engineer Fendall has asked for \$418,250.67 for new grading and paving.

Baltimore, Md.—Council is considering improvement of four streets with improved material.

Southampton, Mass.—Town has voted \$500 for hardening with gravel section of road between this city and Easthampton; State will also spend \$500.

Grand Rapids, Mich.—City will receive bids Nov. 15, 4 p. m., for \$80,000 street improvement bonds.—Jas. Schriver, City Clerk.

Jackson, Miss.—City will issue \$325,000 bonds for improvements, including additional paving.

Kearny, N. J.—Resolutions looking toward

widening to 100 ft. of Turnpike road, from Hackensack Bridge to Frank Creek, have been adopted by West Hudson County Board of Trade.

Trenton, N. J.—Bids will be received Nov. 23, by Board of Freeholders for resurfacing Chambers st.

Rochester, N. Y.—Mayor Edgerton will urge construction of subway at Brown st. crossing of New York Central Railroad.

White Plains, N. Y.—Board of Trustees will sell, Nov. 11, \$20,000 macadam bonds.

Ironton, O.—Breed & Harrison, Cincinnati, have been awarded \$30,000 worth of Lawrence County \$50,000 road improvement bonds for \$30,111. Miss Charlotte C. Castner, city, secured \$5,000 worth at \$25 premium, and C. B. Egerton, city, \$15,000 worth at \$15.230.

Cleveland, O.—City, Commissioners of County and Chamber of Industry have taken preliminary steps to the construction of parkway and boulevard which will extend through deep gorge of Rocky River, five miles outside the city, and will cross and recross the rapids on art bridges of concrete and granite.

Toledo, O.—City has awarded \$100,000 street bonds to Ohio Savings Bank and Trust Co. at \$587.75 premium.

Fredericksburg, Va.—Spottsylvania County has voted \$100,000 bonds for improvement to public roads.

Spokane, Wash.—Official announcement has been made by Henry L. Bowlby, State Highway Commissioner, that \$1,000,000 will

be expended on new state and state-aid roads in eastern Washington, work to begin as early as possible the coming spring; roads will be in Douglas, Lincoln, Adams, Spokane, Stevens, Whitman, Asotin, Garfield and Walla Walla counties. Commission has a state appropriation of \$124,000 to provide five rock crushers to be installed at Walla Walla, Lewis, Yakima and Spokane counties and Fidelity Island.

Tacoma, Wash.—City Engineer W. C. Raleigh has prepared plans for improvement of Siltum ave.; cost \$18,000.

Racine, Wis.—Board of Public Works has estimated cost of resurfacing Washington ave. from Asylum ave. to the west city limits, as follows: 13,280 sq. yds. resurfaced with stone, \$3,320; stone with oil, \$4,648; stone with tarvia, \$5,312; stone with asphalt, \$9,296.

Racine, Wis.—Mayor Horlick has recommended paving of Lake ave. and six other streets.

BIDS RECEIVED

Toronto, Ont., Can.—The Controllers have awarded the following asphalt pavement tenders: Godson Contracting Co., Cecil st., Henry to Beverley, \$1,629; Trinity Square, Yonge to 220 ft. west, \$970; Barber Asphalt Co., Lennox st., Bathurst to Manning, \$4,655; Maple Grove, Brock to O'Hara, \$1,653; City Engineer, Glen rd., bridge to Highlands, \$1,839; Russell Hill, Clarendon to St. Clair, \$6,507; Heath st., Yonge to ave. road, \$11,077; Roxborough st., Edgar to Binscarth, \$12,707.

Birmingham, Ala.—Following is a tabulated list of bids received Nov. 4, for which contract was awarded E. W. Jordan Contracting Co., for \$45,920.00. Maury Nicholson, City Engineer.

CONTRACTOR	Square Yards Paving	Price	Lin. Feet Curb	Price	Lin. Ft. Cir. Curb	Price	Total
E. W. Jordan.....	23,500	\$1.84	5,000	\$0.50	300	\$0.60	\$45,920
Southern Bitulithic Co.....	15,500	1.90	5,000	.50	300	.50	48,106
	8,000	2.00					
R. S. Blome Co.....	23,500	1.95	5,000	.50	300	.65	48,520
D. & L. Bros.....	23,500	1.98	5,000	.50	300	.50	49,180
Graves-Mathews Paving Co.....	23,500	2.00	5,000	.53	300	.60	49,830
Hassam Paving Co.....	23,500	2.65	5,000	1.00	300	1.25	67,650

SEWERAGE

Chicago, Ill.—Board of Trustees of Sanitary District has authorized \$2,500,000 serial bonds.

Garnett, Kan.—Contract will be let in about 30 days for construction of sewers; cost \$56,000.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., Engineers.

Minneapolis, Kan.—Contract will be let Nov. 16 for construction of sewers; cost \$30,000.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., Engineers.

Baltimore, Md.—City Engineer Fendall has asked for \$32,100 for new sewer improvements.

New Bedford, Mass.—City Engineer W. F. Williams will purchase instruments required for sewer work at cost of \$10,000.

Springfield, Mass.—Board of Public Works has decided to construct sewer on Brooks ave.

Centralia, Mo.—Plans are being prepared for construction of sewers and water works; cost \$75,000.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., Engineers.

Omaha, Neb.—County Commissioners have asked Council for sewer on Howard st.; cost, \$3,200.

Portales, N. M.—Contract will be let about Dec. 1 for sewers, water works and lighting plant; cost, \$85,000.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., Engineers.

Perth Amboy, N. J.—Board of Aldermen is considering construction of 12-in. pipe sewer in Lewis st. and 18-in. sewer in Sutton st.

West Hoboken, N. J.—Town has passed ordinance to provide for construction of sewers in Union and two other streets.—J. P. McMahon, Town Clerk.

Oklahoma City, Okla.—Plans have been completed by the City Engineering Department for Deep Fork sanitary sewer system which will connect city with the proposed disposal plant, to be erected $\frac{3}{4}$ of a mile northeast of Country Club on Deep Fork. System of sewers will be composed of six separate branches and taken in connection with disposal will cost in their entirety in the neighborhood of \$100,000.

BIDS RECEIVED

New Liskeard, Ont., Can.—The McKnight Construction Co. has been awarded contract for first section of the Whitewood ave. sewer at \$8,468; the installation of the septic tank and continuing the sewer up Whitewood ave. will be left over until next spring.

WATER SUPPLY

Alameda, Cal.—Council is considering election on bond issue for installation of salt water system for fire fighting and street sprinkling purposes.

San Francisco, Cal.—Finance Committee will receive bids Dec. 1 for purchase of \$360,000 water bonds and balance of \$600,000 authorized for preliminary work on Hetch-Hetchy system.

Caldwell, Kan.—Plans are being prepared by Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., for water works improvements; cost \$30,000.

Colby, Kan.—City will install water works and lighting plant; cost \$50,000; plans completed.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., Engineers.

Erie, Kan.—Citizens have voted \$50,000 bonds for combined water works and electric light system.

Jamestown, Kan.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., have completed plans for installation of water works and lighting plant; cost \$25,000.

Marion, Kan.—Contract will be let in about 30 days for construction of water works and lighting plant; cost \$65,000.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., Engineers.

Russell, Kan.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., are completing plans for installation of water works; cost \$60,000.

Salina, Kan.—Citizens have defeated proposition to purchase water works.

Wakefield, Kan.—Contract will be let in about one month for water works; cost \$20,000.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., Engineers.

Grand Rapids, Mich.—City will receive bids Nov. 15, 4 p. m., for \$50,000 engine and stand pipe bonds; \$100,000 pumping station and \$50,000 water extension bonds.—Jas. Schriver, City Clerk.

Jackson, Miss.—City will issue \$325,000 bonds for improvements, including establishment of better water supply.

Centralia, Mo.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., are preparing plans for construction of water works and sewer; cost \$75,000.

Belden, Neb.—Bids will be opened Dec. 15, 1:30 p. m., for construction of stand pipe and foundation for same and installation of the pipe, valves and hydrants; also for well and triplex deep well pump for same.—P. B. Barber, Village Clerk.

Portales, N. M.—Contract will be let about Dec. 1 for water works and lighting plant and sewers; cost \$85,000.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., Engineers.

Hydro, Okla.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., have completed plans for water works; cost \$30,000.

Bentleyville, Pa.—Bentleyville Water Co. will erect reservoir on North Pigeon creek.

North Wales, Pa.—A New York syndicate has purchased the North Wales plant of Montgomery Heat and Fuel Co., to supply that town and Lansdale, and later extend its service to Quakertown.

Salt Lake City, Utah.—Council will consider improvement of water system; cost \$125,000.

LIGHTING AND POWER

Jacksonville, Fla.—City will purchase quantity of copper; also transformers, lamps and switchboard for two circuits of 50 lamps each.

Colby, Kan.—Plans have been completed for electric light plant and water works; cost \$50,000.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., Engineers.

Erie, Kan.—Citizens have voted \$50,000 bonds for combined electric light and water works system.

Jamestown, Kan.—Burns & McDonnell, Kansas City, Mo., have completed plans for installation of lighting and water works plant; cost \$25,000.

Marion, Kan.—Contract will be let in about 30 days for construction of lighting and water works plant; cost \$65,000.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., Engineers.

Portales, N. M.—Contract will be let about Dec. 1 for lighting and water works plant and sewers; cost \$85,000.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., Engineers.

New York, N. Y.—New York and North Side Traction Company will erect power house on Alley creek, Bayside Meadows, Long Island.

Portland, Ore.—Lighting Committee, assisted by City Engineer Morris, will reorganize street lighting system of city.

Bentleyville, Pa.—Bentleyville Water Co. is considering establishment of electric light plant.

Topton, Pa.—Council has granted franchise to B. Frank Harpel for furnishing electric lights to that town for seven years; plant will be finished in one year.

Galveston, Tex.—Bids will be received until Nov. 11 by John D. Kelley, City Secretary, for a condenser apparatus, including jet condenser, two pumps and necessary piping, from exhaust side of engine and from the receiver tank in order to secure a vacuum of from 27 to 28 in. on the exhaust from two 100-k.w. General Electric turbines; temperature of water, 85 degrees F.; average of available cooling water, 1,000,000 gals. per 12-hour night.

FIRE EQUIPMENT

Springdale, Ark.—Town has organized volunteer fire department.

Allingtown, Conn.—Citizens will petition Selectmen of Orange to establish fire districts; equipment and hydrants are needed.—C. J. Atwood, President.

Monroe City, Mich.—Paid fire department is being organized.

New Britain, Conn.—Fifth Ward residents are urging installation of fire engine in their section.

Kansas City, Kan.—Citizens have voted \$60,000 bonds for three new fire stations.

Clayton, N. J.—Fund will be raised to build and equip fire house.

Jersey City, N. J.—North Bergen Township Committee has directed Joseph Turck, architect, to prepare plans for the proposed new fire house for Excelsior Co., New Durham.

Pittsburg, Pa.—City will install auto equipment in three houses, auto trucks and hose wagon will be placed in near future.

BIDS RECEIVED

Key West, Fla.—Fire Committee has recommended purchase of an Ahrens fourth size Continental type fire engine at cost of \$5,150.

Pensacola, Fla.—Fire Committee has recommended purchase of 1,100 ft. of Red Cross 2-ply hose at 90 cts. per foot.

ELECTRIC RAILWAYS

Uniontown, Pa.—William A. Stone and capitalists of this city have been granted franchise to operate trolley line in this city.

Logan, Utah.—Citizens have appropriated \$15,000 toward construction of street railway promoted by David Eccles.

BRIDGES

New Haven, Conn.—Bids will be received Nov. 22, 2 p. m., for constructing rim-concrete arch bridge on Edgewood ave., over West River.—G. W. Kelly, City Engineer.

Fulton, Ill.—Town has voted \$3,000 bonds for bridge purposes.

Streator, Ill.—Finance Committee is considering bond ordinances providing for raising of \$40,000 for building new bridge.

Leavenworth, Kan.—County Commissioners have advertised for bids for repairs to four bridges.

Topeka, Kan.—City will have to rebuild number of bridges.

Portland, Ore.—Engineer Ralph Modjeski will prepare plans for proposed Broadway bridge.

Pittsburg, Pa.—Stowe Township has voted \$20,000 bonds to erect bridge over Pittsburg and Lake Erie tracks at Island ave.

MISCELLANEOUS

San Francisco, Cal.—City will sell Dec. 1 \$460,000 hospital bonds.

Stamford, Conn.—City Treasurer will receive bids until noon, Nov. 26, for \$45,000 public park and \$33,000 library bonds.

Jacksonville, Fla.—City Board of Health is considering securing of additional crematories.

Newton, Kan.—Citizens have voted \$5,000 bonds to purchase site for amusement park.

Hutchinson, Kan.—The Police Department is endeavoring to get Bell Telephone Co. to put in a red light system for night police.

Kansas City, Kan.—Citizens have voted \$200,000 bonds for city hall and \$30,000 for workhouse.

Lyons, Kan.—C. B. Welty and W. W. Welch, Arcola, Ill., are interested in establishment of ice plant.

Topeka, Kan.—Council is considering plans for proposed garbage crematory.

Beverly, Mass.—City has awarded \$16,000 public library bonds to E. M. Farnsworth & Co. at \$101.53.

Boston, Mass.—Council has disregarded Finance Commission's recommendation to rescind \$80,000 loan order for new courthouse and police station in East Boston, and passed to second reading order introduced by Councilman Frank A. Goodwin providing for additional loan of \$25,000 to make more commodious and modern structure.

Melrose, Mass.—Citizens will vote Dec. 12 on \$36,000 bonds to provide public park and playgrounds.—E. H. Moore, Mayor.

Atlantic City, N. J.—George H. Earle, Jr., Philadelphia, Pa., is interested in construction of pier on Maryland ave.; cost about \$1,000,000.

Albany, N. Y.—State Canal Board has approved plans for barge canal contract No. 44 for construction of 7.10 miles of the canal, about 1,500 ft. west of Mud Creek, Oneida County, at estimated cost of \$1,926,093.

New York, N. Y.—Henry B. Seaman, Chief Engineer of Public Service Commission, has recommended acceptance by Commission of moving platform subway route between 14th st. and 42d st., in Broadway, proposed to Commission by Continuous Transit Securities Company, of which Max E. Schmidt is president.

North Tarrytown, N. Y.—Taxpayers will vote \$11,000 to purchase site for town hall.

Rome, N. Y.—Bids will be received until Dec. 1, for garbage contract for coming three years.—Address Health Officer Mahady.